JULY 1995
Volume 63 No 7

AMATEUR RADIO

Journal of the Wireless Institute of Australia

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Mal VK6LC operating VK6ISL in the present day homestead on Faure Island. For details of the Faure Island DXpedition, see Stephen Pall's *How's DX* column in this issue.

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Editor's Comment

Remembrance Day

There are several places in this issue where next month's Remembrance Day contest is discussed. The rules are detailed in this month's Contest Column, but something else is also mentioned there and elsewhere. This is that, if desired, Contest participants should not just call "CQ RD" but "CQ RD 50" in commemoration of the 50th anniversary of the resumption of amateur radio in Australia after the end of World War II. Later, nearer to the actual anniversary date in November, there may be other activities as well.

In the meantime I just wanted to mention another fact or two about this, our most popular contest. Some people, hearing the call "CQ RD 50" might imagine that it is the 50th RD Contest. No, it is only its 47th year. Although the Contest commemorates the end of the Pacific war in August 1945, it was not actually established as a contest until 1948. So perhaps again in 1997 we would have reason to call "CQ RD 50" for the 50th Contest, and in 1998 for the 50th anniversary.

At the time of the first Remembrance Day Contest, I had been on the air as VK5BP for about eight months. Although I had joined the WIA when it re-formed in 1945, I obviously hadn't read my *Amateur Radio* for August 1948. Demonstrating my homebrew AM equipment to some visitors, I was surprised to hear all the serial numbers being exchanged on 40 metres. So I called a station (it was VK3TG) and asked what it was all about. He (Frank, not the present 3TG) "put me in the picture" and away I went for another five QSOs. One of them was Jim VK2BO, who has been in every RD Contest since! But I only put in a six QSO check log and didn't appear again in the Contest until years later as a VK3. Thinking back, I am glad I can say I was in the first RD, even if only for about one hour!

On The Grapevine

Years ago, even before I joined the WIA (and that was 50 years ago!) I asked the amateur who was my source of knowledge then (my "Elmer" as some would put it), "Was there an organisation of radio amateurs before the War?"

His response was, "Well, there was the old Wireless Institute". This was in a tone of voice, accompanied by a feeble grin, which in a few words gave the impression that the Institute was a rather ineffective body representing a minority of amateurs, and whose members were always squabbling!

Has anything changed? As some of you may have heard or seen, particularly on the "packet grapevine", there are disagreements and arguments, some involving our Publications Committee, still continuing, and mostly over trivialities.

Must we continue this way? If we do, we risk, at best, a disgruntled minority membership, becoming even smaller, or at worst, the demise of the WIA.

After 85 years that would be too sad to contemplate.

Bill Rice VK3ABP
Editor
ar

WIA News

No Changes to Contents of Amateur Licence Exams

Although the new amateur licence conditions and regulations were announced last month, there will be no change to the content of the amateur licence regulations examinations, for the time being.

The examination question bank for the regulations is now being revised to reflect the changed licence conditions and operating privileges. The final details of the new licence conditions and regulations were only completed a few short weeks before being released. The regulations were signed by the Governor General on 28 March, and are much foreshortened to those which prevailed previously. Most of the operating conditions and privileges are set out in the new Technical Licence Specifications, gazetted on 2 June.

Those who are presently studying for the regulations examination, radio amateurs assisting them, along with invigilators conducting examinations, should put out of their minds the details of the new licence conditions to avoid confusion.

The regulations examination will continue, for the time being, to be based on the regulations applying to the amateur radio service as detailed in the current Spectrum Management Agency brochures RIB70, 71 and 72, issued before 2 June, this year. The SMA advise that they will not be revising these documents until later this year.

The AOCP and Novice theory syllabuses are also to be revised by the WIA, along with the respective theory question banks. Just as the Limited Licence requires a pass in the AOCP theory and regulations, the new Novice Limited only requires a pass in the Novice theory and regulations examinations.

A formal announcement will be made by the WIA in due course regarding the introduction date of both the revised regulations and theory exam question banks.

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The WIA consists of seven autonomous State Divisions. Each member of the WIA is a member of a Division, usually in their residential State or Territory, and each Division looks after amateur radio affairs within its area.

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Note: All times are local. All frequencies MHz.

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MONTHLY BROADCAST on the second Sunday of the month, starts 10.30 am. Primary frequencies 3.615 LSB, 7.085 LSB, and FM(R)s 146.700 Mt Dandenong, 147.250 Mt Macedon, 147.225 Mt Baw Baw, and 2 m FM(R)s VK3RMA, VK3RSH, VK3ROW. 70 cm FM(R)s VK3ROU and VK3RGL. Major news under call VK3WI on Victorian packet BBS.	(F) $72.00 (G) (S) $56.00 (X) $44.00
1.825, 3.605, 7.118, 10.135, 14.342, 18.132, 21.175, 24.970, 28.400 MHz. 52.525 regional 2m repeaters and 1296.100 0900 hrs Sunday. Repeated on 3.605 & 147.150 MHz, 1930 Monday	(F) $72.00 (G) (S) $56.00 (X) $44.00
1820 kHz 3.550 MHz, 7.095, 14.175, 28.470, 53.100, 147.000 FM(R) Adelaide, 146.700 FM(R) Mid North, 146.900 FM(R) South East, ATV Ch 34 579.000 Adelaide, ATV 444.250 Mid North Barossa Valley 146.825, 438.425 (NT) 3.555, 7065, 10.125, 146.700, 0900 hrs Sunday	(F) $72.00 (G) (S) $56.00 (X) $44.00
146.700 FM(R) Perth, at 0930 hrs Sunday, relayed on 1.825 3.560, 7.075, 14.115, 14.175, 21.185, 28.345, 50.150, 438.525 MHz. Country relays 3.582, 147.350(R) Busselton 146.900(R) Mt William (Bunbury) 147.225(R), 147.250(R) Mt Saddleback 146.725(R) Albany 146.825(R) Mt Barker broadcast repeated on 146.700 at 1900 hrs.	(F) $60.75 (G) (S) $48.60 (X) $32.75
146.700 MHz FM (VK7RHT) at 0930 hrs Sunday relayed on 147.000 (VK7RAA), 146.750 (VK7RNW), 3.570, 7.090, 14.130, 52.100, 144.150 (Hobart) Repeated Tues 3.590 at 1930 hrs	(F) $69.00 (G) (S) $55.65 (X) $40.00

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Transmitters

80 Metre CW QRP Transmitter

Peter Parker VK1PK describes how to build a simple, low power transmitter which would be ideal as a first homebrew transmitter.*

It has never been easier or cheaper to construct amateur radio equipment. Modern technology, which has given us black boxes with every conceivable feature, has also provided a host of components which can simplify home construction.

A case in point is the 80 m CW transmitter described here. This transmitter is frequency agile and its one watt output is ample for local contacts. A power amplifier can be added later if desired. The basic design is not new (see Reference 1 and 2).

All components are available new and the total cost should not exceed $30.00 using new components.

Circuit Description

Most simple transmitters are crystal controlled. This assures stability but limits the rig's utility. While a VXO is useful on the higher bands the frequency pulling range with 3.5 MHz crystals is small. The key to increased frequency agility on 80 m, without a conventional VFO, is the low cost 3.58 MHz ceramic resonator.

The pulling range of a 3.58 MHz ceramic resonator covers the Novice 80 m sub band and part of the CW segment below 3.525 MHz. A ceramic resonator is like a crystal but not quite as frequency stable. The main advantage is the large frequency pulling range.

The transmitter block diagram is shown in Fig 1. It is similar to a crystal controlled transmitter and includes an oscillator, buffer, and final amplifier. The final amplifier is keyed and the oscillator remains operating during the time that the operator is sending. Keying the oscillator would make frequency stability difficult to obtain and should generally be avoided. The oscillator must be switched off when receiving to avoid interference. An exception would be in a direct conversion transceiver. Transmit receive switching is by a panel mounted switch which switches both the antenna and power to the oscillator and buffer.

The transmitter schematic diagram is shown in Fig 2. An unusual aspect of this transmitter is the use of a digital CMOS IC type 4069 for the buffer and oscillator stages. The IC contains six inverters of which four are used in this circuit. One inverter is used as the oscillator. Two inverters are used as the buffer stage. The fourth provides an output should a direct conversion receiver be added.

The frequency of the ceramic resonator oscillator is changed by varying added capacitance in the oscillator circuit. Greater downward shift is obtained by having a small inductor in series with the variable capacitor. In this respect this circuit operates like a conventional VXO but tunes a wider range and is more predictable in operation. The variable capacitor is a standard transistor radio type. While unsatisfactory in conventional VFOs, they provide acceptable stability in this circuit.

The power amplifier is a small MOSFET. The device is capable of providing an output power of two watts but, in this circuit, it is conservatively run to give 1.5 watts. The power output can be adjusted by varying the resistance of the three megohm gate resistor. Don't be greedy, though, as attempts to raise power by decreasing the value of this resistance may result in MOSFET failure.

A pi network provides impedance matching to 50 ohms, plus harmonic suppression. Like all inductors in this transmitter, the pi network inductor is a pre-wound RF choke.

Keying is accomplished through a PNP transistor switch. Closing the key earths the base and provides 12 volts on the collector of the BC640, allowing the power amplifier to operate.

Construction

All parts are available cheaply from retailers. The hardest component to obtain is the 3.58 MHz ceramic resonator. It is available from RS Components (Cat No 656-170) for a little over $2 in single lot quantities. RS Components have branches in most capital cities. The VN10KM MOSFET is available from Dick Smith Electronics, as is the variable capacitor. All other components are available from a variety of stockists. Polystyrene capacitors are suitable for the pi network and the ceramic resonator oscillator stages. All capacitors can be disc ceramic and the resistors are all quarter watt, 5% tolerance.

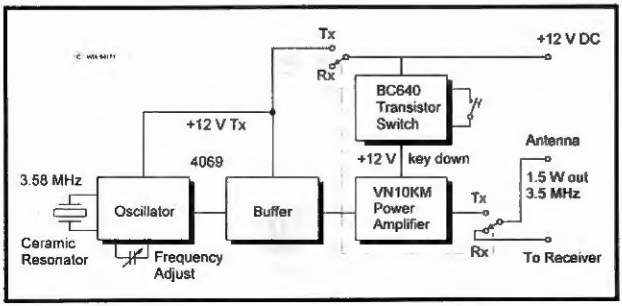

Fig 1 — Block Diagram.

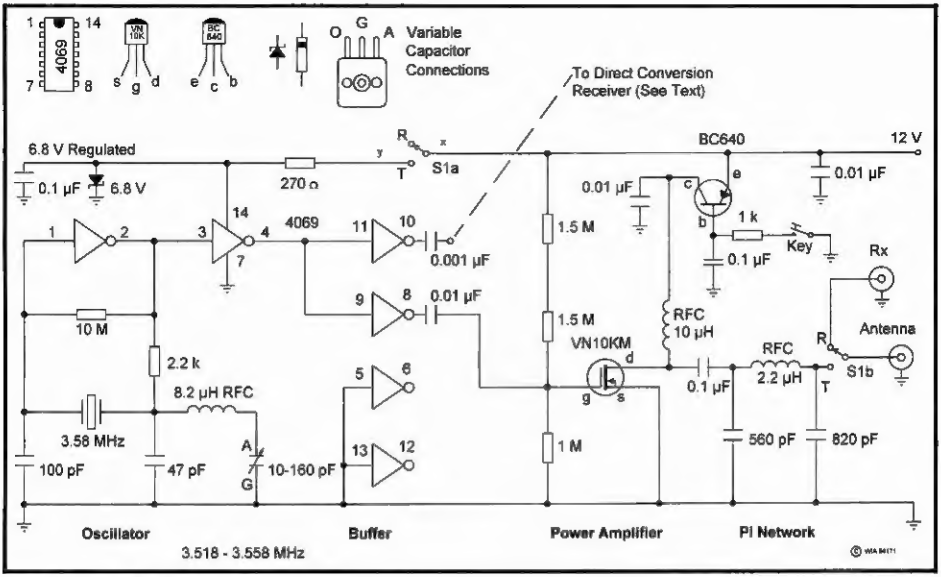

Fig 2 — Schematic Diagram.

A metal box should house the transmitter. It is generally poor practice to build transmitting equipment in plastic cases because of hand capacity effects and the increased risk of generating interference due to lack of shielding. Size is not important provided it is large enough to accommodate the transmitter without overcrowding components. While an ultra miniature transmitter may initially appeal to the beginner, it can be a source of frustration if trouble shooting is later required. You may wish to allow space for future additions and modifications to the rig. These may include a direct conversion receiver, break-in keying facilities, sidetone, or a small power amplifier. A good size is 5 x 15 x 15 cm. Your box can either be purchased or home made. Scrap printed circuit board material and aluminium are both good materials for fabricating cases at home. Loaf tins from your local supermarket also serve well as enclosures for home made transmitters.

Both front and rear panel components can now be mounted. The choice of connectors is a personal matter. A wide range is available but I would recommend the following:-

12 V power socket:-
2.1 mm panel socket — centre pin positive.
Key socket:-
6.3 mm mono headphone socket.
Antenna connector:-
RCA socket.
Antenna connection to receiver:-
RCA socket.

All these connectors are readily available, cheap and widely used by QRP operators and experimenters. Whatever your choice, make it your standard for all equipment you intend to construct. Particular caution must be exercised when mounting the variable capacitor. The hole for the shaft must be large enough for it to turn freely. Unfortunately, new capacitors are often not supplied with mounting screws. This may necessitate your gluing the capacitor to the front panel. Use glue sparingly and keep it away from the shaft and mounting holes.

A board size of 6 x 10 cm is sufficient. Fig 3 shows a suggested board layout. It is up to you how you mount components. I prefer blank matrix board. Do not use strip type board as such boards have high capacitances between parallel tracks. Such capacitances degrade the operation of RF circuits and in this transmitter will reduce the range over which the ceramic resonator can be pulled.

Component leads are passed through holes in the board to be soldered underneath. It may be necessary to use short lengths of tinned copper wire to make some connections. Ensure that connections are rigid to prevent short circuiting. To facilitate servicing and testing it is desirable that circuit board pins be used for connections to the variable capacitor, Tx/Rx switch, antenna and power sockets. Use screws and spacers to mount the circuit board to the enclosure. Mounting the board horizontally aids trouble shooting.

It is desirable that a socket be used for the IC. Particular care should be taken to ensure that no IC socket pins are accidentally bridged when soldering. Excessive heat may damage the ceramic resonator and the semiconductors, so make each solder joint quickly. The negative earth line running across the bottom of the circuit board must be connected to the metal case by a short, stout lead. This connection could be made to the earthed part of the key socket. Normally, connections to the antenna socket are made with RG174 miniature coaxial cable. This cable is somewhat expensive and you may choose, instead, to use lengths of standard insulated wire. At 3.5 MHz the inductance of these leads is less significant. Little degradation of transmitter performance should be noticed if short direct connections are used.

Testing

After checking your wiring against both the component layout and schematic diagrams, the transmitter should be tested for correct operation. You will need a multimeter, 80 m SSB receiver and a 50 ohm dummy load. Such a dummy load could consist of two 100 ohm, one watt resistors wired in parallel. An RF power meter and frequency counter will also be found useful. A one amp, 12 volt power supply, or rechargeable gel battery, is a suitable power source for the transmitter.

With the power connected and transmitter switched to receive, no current should be consumed. Switch to transmit and check that pin 14 of the 4069 is 6.8 V above earth. With the dummy load connected to the antenna socket, press the key. The voltage on the BC640 collector should now be 12 volts, dropping to zero once the key is released.

The ceramic resonator oscillator should now be checked for correct operation. With the rig in transmit mode it should be possible to hear a strong carrier signal in the receiver. Adjusting the variable capacitor should change its frequency. You may find that, at the lower end of the frequency range, the oscillator is

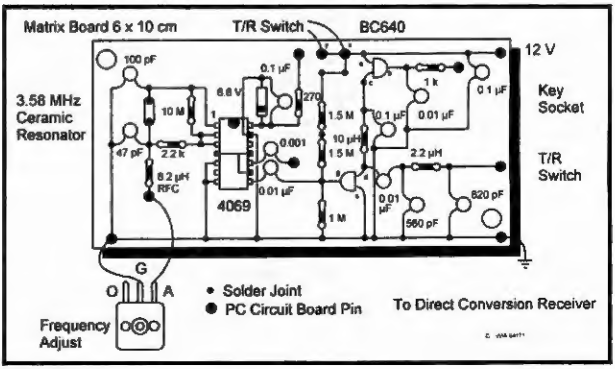

Fig 3 — Component Layout.

unreliable in starting. This is because your circuit is attempting to pull the ceramic resonator too low in frequency. To remedy this, the trimmer on the back of the variable capacitor should be set to minimum capacity. Most variable capacitors have two trimmers, one for each section. If in doubt as to which one, set both to minimum capacity. If you still experience trouble in getting the oscillator to start, reduce the value of the 8.2 μH RF choke. Try 6.8 or 4.7 μH.

In all probability the unmodified circuit shown in Fig 2 will not require any of the changes outlined above. It should be possible to achieve a coverage of 3.518 to 3.558 MHz and preserve good frequency stability and reliable oscillation. This range includes much of the CW segment and frequencies used by the WIA Morse practice broadcasts.

Pressing the key should result in a stronger signal at the receiver as well as an increase in the transmitter's current consumption. An RF probe is useful to verify the operation of the power amplifier. Alternatively, an RF power meter can be used. Measured output should be in the neighbourhood of 1.5 watts and the transmitter should draw 200 to 300 mA. If the VN10KM becomes too hot to touch after a few seconds of transmitting, then the three megohm gate resistor should be increased to limit transistor heat dissipation.

Those without test equipment could use a small light bulb across the antenna socket to check operation of their transmitter. A 6.3 V globe is ideal. Depending on the transmitter power output, an orange to white glow on key down is an indication that the rig is operating satisfactorily.

The final test is to monitor keying quality. With the 50 ohm dummy load connected, press the key and listen to the note produced in the receiver. It should be free of chirps and clicks as well as being stable in frequency. Because the oscillator is running continuously during transmit you may notice a backwave when the key is up. Stations you contact will not hear this. If clicks appear on your transmission, try reducing the RF Gain as strong local signals can cause popping in the receiver AGC system. The quality of emissions from this transmitter design is generally good and no problems should be encountered.

Frequency Tuning Notes

There are some peculiarities with this transmitter. The first is that the frequency tuning is non-linear. Stations will be more spread out and easier to tune-in near the lower end of the tuning range. However, for a CW transmitter, with Morse activities being in the lower parts of our HF bands, I consider this feature an advantage.

Although ceramic resonators are reasonably stable, one of their oddities is that, every now and then, their frequency may change abruptly by about 100 Hz, and then remain stable. Such a characteristic has been noticed on signals from ceramic resonator transmitters. Drift of this magnitude is noticeable, but in no way detracts from the quality of the QSO. Because ceramic resonators are susceptible to temperature variations, it is a good idea to mount them away from heat producing components such as power amplifier transistors.

It was mentioned above that 3.58 MHz ceramic resonators can cover the entire Australian Novice band. This circuit does not do this. It covers approximately 3.520 to 3.550 MHz. Removal of the 47 pF capacitor increases the maximum output frequency up to only about 3.590 MHz. In contrast, simple Pierce oscillators using discrete transistors can cover up to above 3.625 MHz (see Reference 2). Because this transmitter is CW only, it was considered that little would be gained by extending frequency coverage this far. A downward extension of the tuning range towards 3.500 MHz is possible, but at the cost of frequency stability. Possibly a better quality variable capacitor and shielded box may help here.

References

1 — Variable Ceramic Resonator Oscillators, John Townsend G3BBD, Amateur Radio, July 1991, page 21.

2 — Some Experiments with Ceramic Resonators, Peter Parker VK6BWI, Lo-Key, June 1992, page 5.

**71 Garran Place, Garran ACT 2605*

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Update

Apology

In an article by Lloyd Butler VK5BR published in the January issue of *Amateur Radio*, "Capacitors At High RF Power", pages 7-9, is a diagram showing mica capacitors — Figure 1 (page 7).

This diagram is copyright, having previously appeared in an article on capacitors written by Roger Harrison VK2ZRH, published in the Australian edition of *Electronics Today International* (ETI) in 1976.

The author of "Capacitors At High RF Power", Lloyd Butler VK5BR, and the Editor of *Amateur Radio*, Bill Rice VK3ABP, unreservedly apologise to the original author, Roger Harrison VK2ZRH, and the publication *Electronics Today International* for this breach of copyright.

An Adjustable Audio filter System for the Receiver.

The following errors have been detected in the circuit diagram, Figure 3 on page 7 of March 1995 AR.

The 5 volt rail decoupling capacitors C10 and C15 should be connected to pin 4 instead of pin 2 on the 555 timers N4 and N6 respectively.

The 12 volt positive regulator N10 should be a 7812 type and not a 7912 type as designated.

Further tests have shown that the voltage drop across R39 is marginally high when all clocks are in operation. To correct this, R39 should be changed to 390 ohms.

My apologies for any inconvenience this might have caused and thanks to the Canberra radio amateur who assembled the circuitry and brought the errors to my attention.

Lloyd Butler VK5BR

It might be a good idea to correct your copy of the March issue of *Amateur Radio* now!

June Cover Photograph Caption

The caption on page 2 of last month's *Amateur Radio* should have stated that the front cover photograph was of Len **Robinson** VK3ALD, not Len Robertson. Our apologies to Len for this error.

Please correct your copy of the June issue of *Amateur Radio* now!

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■ **Equipment Review**

MFJ-206 Antenna Current Probe

Reviewed by Ron Fisher VK3OM

The MFJ-206 Antenna Current Probe.

Here is something for the real antenna experimenter. The MFJ-206 is another one of those wonderful antenna measuring devices manufactured by MFJ Enterprises, Mississippi State, USA. It is used to detect the magnetic RF field around conductors used as antennas and feeders, or anything that might come within the influence of an antenna such as mast guy wires, household wiring, ground leads, radial systems, etc.

The probe also indicates the orientation of the field. It is tunable over the range of 1.8 to 30 MHz in three switched ranges. The relative RF current is indicated with a normal moving coil meter.

MFJ-206 Circuit

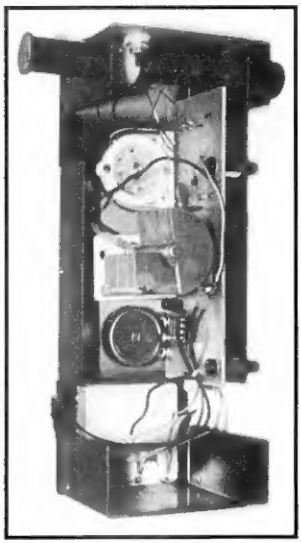
The circuit is fairly straight forward. The tuning coil is wound on a ferrite rod which passes through the top of the enclosure which has a slot to allow the full length of the rod to be exposed to the RF field. This is followed by a single diode detector which drives a 741 op amp to drive the meter.

The unit is powered by a single nine volt transistor radio type battery. Current drain is about 8 mA so the battery should have a long life with normal use. An LED indicates power on.

MFJ-206 In Use

One of the things that you need to appreciate is that the magnetic field is not parallel to the conductor. The ferrite rod pick up antenna in the 206 has to be at right angles to the conductor before you can get a reasonable indication.

One problem in using the MFJ-206 is that the transmitter must be on the air so, if you want to take a few measurements, it might be a good idea to enlist the aid of a friend to key the transmitter when needed. I found that I was able to get a good reading from a dipole on 40 metres with about 100 watts from about 12 metres.



A look inside the MFJ-206.

One of the important uses of the 206 is checking for RF on the outside of coaxial feeders. It will soon show if the balun is doing its job. I would think that it would show some interesting readings on a coax fed G5RV antenna. Unfortunately, I do not have one so I could not try this out.

Conclusions

A great little instrument with a host of uses around the antenna farm, be it big or small. The instruction manual covers the subject in six pages and includes a full circuit diagram.

The MFJ-206 is priced at $199 and is available from Daycom Communications Pty Ltd, 37A Fenton Street, Huntingdale VIC 3166.

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■ History

An Anniversary to be Remembered

*Roth Jones VK3BG**

Coming up later this year, in November, will be another chapter in Australian amateur radio ... the 50th anniversary of the resumption of our hobby after World War II when we were closed down and off the air for five dark years.

Old timers active in the 1930s remember receiving telegrams at the outbreak of hostilities to lock up their equipment "for the duration".

This was in sharp contrast to the resumption post-war when the atmosphere was full of joy and happiness

This is an important anniversary we should all celebrate It should not be restricted to old timers because it is a great chapter in our history.

There will be many suggestions and no doubt the WIA will be gearing up for the celebrations

Amateur radio resumed after World War II in November 1945. To celebrate the event, why not combine it with the Remembrance Day Contest?

Old timer, Herb Stevens VK3JO has already started researching into those pre and post war days. No doubt, too, the WIA will have some plans for all of us to enjoy. *(See below and also in the Contests column for one result of Herb's activities. Ed)*

Most of us had been active in the 30s, an era of AM and CW DX. The world of radio was bringing the people of the world together. When hostilities ceased all were wondering what would be the amateur radio scene in the post war years.

Getting back on the air was not a problem. Many of us, including yours truly, were soon on the air after we got the "all clear".

Radio communication had made tremendous progress during the war years and there was an abundance of gear through the many disposals shops which sprang up like mushrooms.

They were great days with bargains galore. The tiny disposals shops were popular meeting places on Saturday mornings. There was a lot of useless junk, but there were pieces of equipment ideal for our hobby with little modification necessary.

Perhaps the two most useful pieces of equipment were the BC348 receiver and the small Command receivers and transmitters used in wartime aircraft and tanks. All were valve, as the transistor was not invented until 1948. The BC348 was solid, stable and built to last By using the BFO the new SSB mode was tuneable.

Like the Scottish musical of yesteryear, "Brigadoon", amateur radio had wakened from a long, deep sleep. Everyone was busy again as the bands livened up, starting with 28 MHz which was open to the world.

It was a decade old timers remember well. But this is another story no doubt some younger old timer will tell another day

(Agreement has been reached for participants in the 1995 Remembrance Day Contest in August to call, if they wish, CQ RD 50 rather than just CQ RD. Ed)

*23 Cherry Tree Grove, Croydon VIC 3136

■ Try This

A Frequency Counter Preamplifier

Bob Gebhardt VK5RI explains an interesting idea*

I recently came up with the following idea, which I have found useful. I hope you find it of interest.

At times I use a Yaesu frequency counter to set up the transmit and receive crystals of older style transceivers to the desired frequency. The transmit crystal is usually no problem as there is enough output to give a valid readout on the counter. But with the receive crystal, with its multipliers and generally lower levels, it is harder to get a good reading.

In my junkbox I had a Philips OM350 hybrid circuit. It was designed as a masthead amplifier for TV purposes which means that it has wide bandwidth and good signal handling characteristics; just what we need. I connected it up as shown in Fig 1.

The amplifier makes a considerable difference to the counter's operation. I can now get a reliable readout from the low level stages of the receive oscillator/multiplier chain of all the VHF (2 metre) transceivers that I have tried. I see no reason why it would not help with 70 cm gear or even the UHF CBs that I occasionally get for repair. It would most likely be of use at the upper end of the HF band as well.

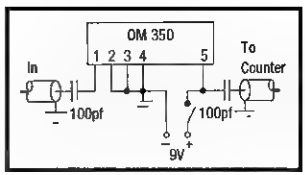

Fig 1.

*Mokota, Mount Bryan, SA 5418

Technical

Technical Abstracts

*Gil Sones VK3AUI**

Microwave Oven HV PSU

Discarded microwave ovens are an unsuspected source of components for a high voltage power supply. The demise of the magnetron often leads to the oven being discarded. In addition to the box and screening materials the discarded oven contains a basic high voltage power supply.

Two articles concerning the use of components from discarded microwave ovens to make a high voltage power supply for a valve linear amplifier have appeared in the Pat Hawker G3VA *Technical Topics column in Radio Communication.* The first mention came from Dave Penny G3PEN in the November 1993 issue. A further item by John Harper-Bill G3IZM in the February 1994 issue gave more details and a suggested circuit using two discarded oven transformers to provide 3 kV at 600 mA. This circuit is shown in Fig 1.

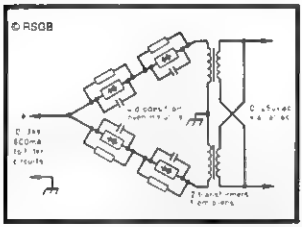

Fig 1 — High Voltage Power Supply based on two microwave oven power transformers. Transformers connected to provide full wave rectifier of bi-phase half wave type.

The oven power supplies were of the half wave type but with only a 1 μF capacitor for fairly rudimentary filtering. The transformers were built in such a way that only a half wave rectifier was possible because the insulation on the earthy end of the high voltage winding was much less than on the high voltage end. This precluded using a bridge rectifier as this would require high voltage insulation of the whole winding.

Using two transformers from the same type of oven the high voltage outputs can be combined to provide more current by synthesising the bi-phase half wave circuit. This is shown in Fig 1. The circuit is the same as that using a centre tapped secondary. Care must be taken to phase the primaries so that each rectifier string works on alternate half cycles. This makes filtering easier as the ripple frequency is then 100 Hz.

An improved filter capacitor will have to be provided and a series string of high voltage electrolytics would be appropriate. These would, of course, require equalising resistors in parallel with each electrolytic. The filter capacitor has two functions in smoothing ripple and in providing a reservoir to supply the current peaks to the linear amplifier.

The voltage rating of these transformers is in the 1.5 kV to 3 kV region. The power rating is in the 600 W to 1200 W area depending on the rating of the oven they were used in.

The construction of high voltage power supplies requires considerable care as they are extremely dangerous. Safety interlocks and means of discharging the HV filter capacitor must be provided. Similarly, an enclosure for the whole power supply is essential and must be designed so as to prevent contact with the high voltage parts inside. Do not work on a high voltage supply which is running or is still connected to the mains. Also ensure that the high voltage filter capacitors are discharged and are shorted out while working on the supply. A previously discharged capacitor can retain a memory charge which could catch you unawares if the capacitor is not shorted while you are working on the supply.

Other useful parts are inside these ovens. There are timers and switches and a variety of RF screening materials. One item of some interest is the magnetron. Even though it may be defunct, the magnets are useful as an antenna mount. They are often attached by clips which can be pried apart. However, watch out if they are glued as some insulating materials used in power valve manufacture contain highly toxic Beryllium.

Improved Ribbon J-Pole Antenna

An improved version of the 144 MHz ribbon J-Pole antenna appeared in Pat Hawker's *Technical Topics* in the May 1995 issue of *Radio Communications.* The design is from Dr John Belrose VE2CV.

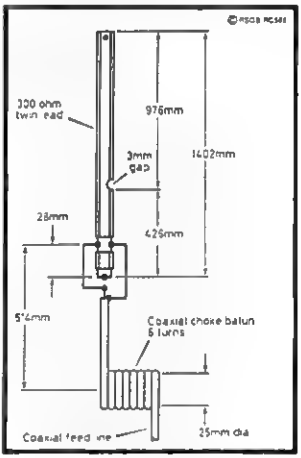

Fig 2 — Improved ribbon J-Pole by VE2CV.

The antenna is shown in Fig 2. The antenna is made from Belden 8230 twin lead which has a velocity factor of 0.83 and is 300 ohm impedance. The length of the radiator is 0.95 of the free space half wavelength, with 0.95 being the experimentally determined antenna factor. The quarter wave stub is 0.83 times the free space quarter wavelength due to the velocity factor of the twin lead. The tapping point was determined experimentally to be about 0.0136 of a wavelength with allowance once again for the velocity factor in the antenna shown in Fig 2.

The improvement consists of the insertion of an RF choke one quarter wave from the feedpoint in the feedline. This choke is six turns of the feedline coiled into a 25 mm inside diameter coil. The choke minimises feed line radiation. VE2CV had noticed that running a hand along the feedline jacket caused a variation in the received signal. The choke minimises this effect caused by feedline radiation.

The antenna is shown in Fig 2 and the SWR curve is shown in Fig 3. The antenna should be suspended by a non-conductive cord from a tree branch or other support. If you encase the antenna in a plastic pipe then you will have to be prepared to trim the antenna to allow for the dielectric of the pipe used as a radome.

Of interest to many is the dual band performance of a J-Pole. VE2CV

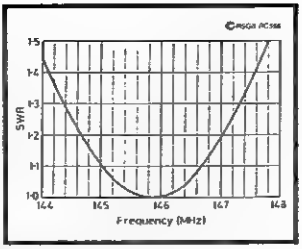

Fig 3 — SWR performance of improved J-Pole.

provided a computer generated vertical radiation pattern of a J-Pole on both 144 MHz and 432 MHz. The pattern on 432 MHz has an elevated main lobe which may not be desirable. However, if you are operating in a city or talking to a mountain top station you may not notice the problem. This pattern is shown in Fig 4.

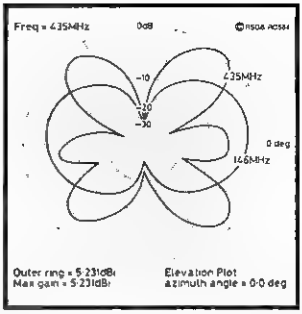

Fig 4 — Computer generated vertical radiation pattern, produced by VE2CV using ELNEC, showing patterns on 144 MHz and 432 MHz.

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WIA News

Packet Gateway Demands Stat Dec From Amateurs

The Launceston Institute of TAFE in northern Tasmania, which runs an amateur radio packet-to-Internet gateway known under the acronym of LITGATE, is requiring radio amateur users to file a statutory declaration with them.

The relevant wording of the declaration says *"That I agree to take full personal responsibility for any information or data which is sent from my station, or from a station operating under my callsign.*

"That I will not hold the Launceston Institute of TAFE responsible for the content of data received through the LITGATE, whether such data is of an offensive, improper, illegal or other unacceptable nature."

Basically, what the Launceston TAFE requires is that radio amateurs wanting access to LITGATE must say they will accept responsibility for all messages under their callsign, whether pirated or not, and agree they will absolve the Launceston TAFE from responsibility for any material placed on its system.

Whether such a statutory declaration is legally binding would be a matter of conjecture. (Thanks to Victorian Division President, Jim Linton VK3PC, for details on that item).

No Licence Fees for Volunteer Emergency Organisations

The Minister for Communications and the Arts, Michael Lee, announced on 7 May that volunteer, non-profit, emergency organisations would be exempt from licence fees for the radio equipment they use.

The announcement followed protests from surf lifesaving organisations and volunteer bushfire brigades, who objected to having to pay licence fees under the new Apparatus Licence system brought in by the Spectrum Management Agency early in April. Some of these groups previously paid no fees.

Surf lifesavers, bushfire brigades and other volunteer community emergency organisations applied public pressure through the media as well as making direct representations to the government.

The Minister subsequently announced that organisations providing volunteer, non-profit, emergency services including rural fire fighting, search and rescue, coast guard, surf lifesaving, and remote area ambulance services would be exempt from radio licence fees.

Seems like they took a leaf from the radio amateurs' book.

WICEN is looking into the possibility of obtaining exemptions under this arrangement for WICEN repeaters and other WICEN-specific licensing requirements.

WIA Meeting with the SMA

On Thursday, 18 May, the WIA's SMA Liaison Team met with the SMA in Canberra. There were eight major subjects on the agenda. These were New Technical Licence Specifications and Regulations; Special Conditions on Repeater Licence Renewals; Action on the 80 metre DX window; Exam Service Memorandum of Understanding; Club Station Operations; Callsigns; SMA Information Paper; and Connection of Amateur Stations to the Telephone Network.

The members of the WIA SMA Liaison team who attended the Canberra meeting were Federal President, Neil Penfold VK6NE; Federal Vice Chairman, Roger Harrison VK2ZRH; Federal Coordinator International Study Groups, David Wardlaw VK3ADW; New South Wales Division President, Michael Corbin VK2YC; and South Australian Division Federal Councillor, Bob Allan VK5BJA.

Only brief comment on most of these topics can be offered at present, but more information will be available after the minutes of the meeting have been finalised and further information which the SMA has agreed to provide becomes available to us.

The then-imminent gazetting of the new Technical Licence Specifications and Regulations was discussed and the SMA agreed to provide a suitable "Stop Press" announcement, which they did, and which was supplied to Division broadcast officers in a WIA News release on 24 May. Following gazettal on Friday, 2 June, the SMA provided the WIA a confirmatory letter on 5 June, clarifying the position. Details are in a separate WIA News item, which was first released on 6 June, the day the new licences became available through SMA area offices.

Special Conditions on Repeater Licence Renewals

A number of repeater licensees have received renewals which have special conditions detailed on the licence, particularly with regard to interference. This reflects conditions which have existed up to now, but have not been attached to licences in the past.

However, the new Technical Licence Specifications for repeaters, not yet ready as of early June but due to be completed soon, will supersede these conditions. It is anticipated conditions regarding the operation of beacons and repeaters on a non-interference/no protection from interference basis, as has existed to now, will be watered down.

80 m DX Window

This matter was raised to get a progress report. The WIA Victorian Division has taken on the task of writing to primary users on the band adjacent to the 80 m DX window, above and below 3800 kHz, to ascertain possible willingness to share. This action is still under way.

The SMA has been monitoring the band and issuing infringement notices to amateurs allegedly breaching their licence conditions.

Exam Service Memorandum of Understanding

The agreement between the SMA and the WIA, under which the WIA Exam Service operates, is still being revised. It is expected provisions under which exams are to be conducted in remote areas will be eased.

Club Station Operations

Conditions applying to the operation of Club stations have long been a bone of contention. The WIA has sought an easing of the requirement to maintain a full log book and to notify portable operation away from the Club licence's address.

The WIA is awaiting a reply from the SMA on this matter.

Callsigns

This is a complex matter. The issues discussed included callsigns for amateurs visiting from overseas, new callsign blocks, the "portability" of callsigns — retaining and using your old callsign when you move interstate (for example), suspending deceased amateurs callsigns from reissue for a period and the possible issuing of single-suffix callsigns, such as VK1A, VK2Z, etc.

In the more populous states — NSW and Victoria — callsigns for full and limited licensees are running out. The SMA canvassed the Institute's views about allocating callsigns to new amateurs in these states from unallocated callsigns in the less populous call areas, VK8 for example. This would mean callsigns would no longer relate to geographic call areas within Australia or its territories, similar to the situation in the USA. This would affect national and international contests, QSL bureaus and other issues relating to Australian amateurs. A move on this is not imminent and the WIA is developing a response to put to the SMA. If you have any ideas of opinions on it, write to your Division who will forward the information to the Federal Council for discussion.

The WIA's SMA Liaison Team explained the sensitive issue of reserving deceased amateurs' callsigns. Apparently, the SMA's new RADCOM computer system has no mechanism at present to permit this. The SMA said the matter would be taken up with their RADCOM Enhancement Committee. Other administrative arrangements on this issue are to

be explored between the SMA and the WIA.

The single suffix VKx callsign blocks are presently issued for Scientific licences (Experimental under the old Apparatus Licence system). As there are only 26 in each callsign block, and some are already allocated in each call area, the SMA advised they don't propose to issue them to amateur licensees, even for special purposes. However, the SMA indicated they would consider future submissions from the WIA on the subject.

As there are lengthy issues and explanations necessary on these matters, and further information is to come from the SMA, more details will have to wait for a later release.

SMA Information Paper

The SMA is releasing an information paper on the new licence conditions and Regulations. Its contents were discussed, and the changes the WIA had suggested might be made to improve it.

The final Information Paper was released along with the new Technical Licence Specifications and Regulations on 6 June, all of which are now available for the asking through SMA area offices. Addresses are listed in the *1995 Australian Call Book*, page 6.

Connection of Amateur Stations to the Telephone Network

While voice "phone patch" has been permitted for some years, the connection of packet stations to the Public Switched Telephone Network (PSTN) is forbidden under the Regulations.

The WIA is seeking a relaxation of this requirement and has asked the SMA to clarify the issue more fully, and to provide reasons for it.

Intruder on the 14 MHz Band

A Vietnamese diplomatic station is continuing to intrude on the 20 m amateur band. Signing VRQ, the station has a centre frequency of 14.330 MHz and operates in A1A mode — CW telegraphy.

WIA Intruder Watch Coordinator, Gordon Loveday VK4KAL, says the intruder has as many as 30 transmissions a day. The station passes traffic to other stations in Vietnam, including those with the callsigns P7A, VLQ, NZB and VMQ, to name a few.

Amateurs and shortwave listeners are asked to listen out for this intruder and file observation reports directly to Gordon, whose address is QTHR in the current Call Book.

Intruder watch does work. Gordon reports that a land-based Greek station operating AMTOR on the bottom end of the 15 m and 20 m amateur bands has been recently moved. Located at Athens, the station was transmitting to ships at sea about provisions required when they reached port.

Following pressure from intruder watch reports, this intruder has adopted a new frequency outside the amateur bands.

Recommencement of Amateur Radio — 50th Anniversary

More material and information related to the recommencement of amateur radio after the end of World War II has come to light.

When Australia declared it would join the war, its radio amateurs were all sent a telegram from the Director General of Posts and Telegraphs, with a direction that they cease all transmissions.

Sent in September 1939, this telegram also directed that all valves, transformers, tuning coils, operating keys and microphones be disconnected.

A follow-up letter received by VK2AHJ, and possibly others, stated: "Will you please note that your aerial, if especially designed for transmitting, must also be dismantled."

Was this follow-up letter received by other Australian radio amateurs?

Herb Stevens, VK3JO, who is the focal point for research into the recommencement of amateur radio, has also received copies of logs. The earliest post-war contact appears to have been on 28 MHz, on 22 December 1945, between VK3DH and VK3VM, now both silent keys. Herb VK3JO is keen to receive any further information about immediate post-war contacts. He says he'd also like to learn if any radio amateur encountered problems recovering their impounded radio gear after the war.

An article on the recommencement is planned for the December edition of *Amateur Radio* magazine. Herb VK3JO, who was the WIA Victoria President during the war period, can be contacted at his Call Book address.

In another development, as a suggestion to mark the occasion of the 50th anniversary of recommencement, it has been proposed to be tied to the Remembrance Day Contest. In a low-key approach, the suggestion is that operators use "CQ RD 50" when putting out calls.

While at first glance this appears to be a good idea, others suggest it should not be forgotten that the RD Contest has particular significance as it commemorates those WIA members who paid the supreme sacrifice during World War II. It is suggested that the CQ RD 50 proposal is inappropriate as the RD Contest is not allied with the 50th anniversary of the end of the war, nor the recommencement of our hobby. (Thanks to Victorian Division President, Jim Linton VK3PC, for details on that item).

Construction

Home Brew is Alive and Well

John Drew VK5DJ says the evidence is there that amateurs are still building excellent equipment.*

Each year at the South East Radio Group Convention in Mt Gambier, SA, prizes totalling $200 attract beginning and experienced home brewers. On the long weekend of 11-13 June 1994, there was gathered one of the finest displays of home brew seen for some time.

The competition is divided into three sections. Here are the rules followed on the day:

Guidelines for the Home Brew Competition At SERG Conventions

This is an honesty system and entrants use these criteria. It is permissible for an entrant to enter above but not below their section.

A Novice Builder is a person who:

1. is, or was, NOT professionally involved in the design or building of equipment;
2. has no ham licence or has held a licence for less than two years; and
3. has built less than 5 projects (kits or own design).

An Experienced Builder is a person who:

1. is, or was, NOT professionally involved in the design or building of equipment;
2. has held a licence for more than two years and less than 10 years, OR has built more than 5 simple projects (kits or own design).

An Expert Builder is a person who:

1. is, or was, professionally involved in the design or building of equipment; or
2. has held a ham licence for 10 years or more; or
3. is anyone who doesn't fit any of the above.

The Projects Will Be Judged on Criteria Which Include:

Workmanship, which includes mechanical construction, soldering, layout of the sections using good practice for the frequencies used, use of suitable materials, controls with knobs and labels, serviceability, safety, and appearance. Originality will be considered as will complexity of the project and the documentation.

There were about 30 entries in all and they varied in complexity from a simple one valve CW transmitter for 80 metres to a 2 metre transceiver and high power linear amplifier to suit.

In the novice section some of the entries were an active antenna, a novice valve Tx, J-pole antenna, and a Z match antenna matcher. In the experienced section entries included a 10 metre fox hunting system, home brew copies of a communications receiver and a regenerative receiver, a home brew paddle and a DFing auto ranging receiver. In the expert

The judges of the homebrew competition Chris VK5MC, John VK5DJ and Kevin VK5QA examining one of the entries.

section there was a large gathering of UHF/SHF equipment. Chris VK5MC was moved to say *"This was the largest and best collection of 10 gigahertz gear in the country, without a doubt".*

The winner of the novice section was Paul VK5PSG for his 80 m QRP crystal locked transmitter. It included an AC power supply and a single tube Colpitts oscillator.

In the experienced section the winner was VK3BMV with his 10 metre direction finder. The circuit boards were well laid out and neatly etched, the shielding was excellent and the whole construction was mechanically sound. The documentation was good.

In the expert section the winner was VK3ZQB for his 2 metre transverter and high power amplifier. The documentation was superb and would surpass many commercial efforts. Russell made use of surplus parts, the engineering skills were of a high level, and the front panels were labelled neatly. His construction showed excellent VHF practice including filtering of the output and his consideration for safety in the wiring of the high voltage to the final was excellent.

Documentation was a highlight of almost all projects. It showed the influence of word processors, circuit drawing programs and PCB layout programs. Parts lists also featured. The judges made special mention of the documentation for the "Ultimate Sniffer" by VK3TJN and VK3XAJ.

The judges saw that there was an increasing interest in satellite TV and UHF/SHF communications. Roger VK5NY entered boards for the G3WDG 10 GHz systems while David VK5KK entered a very portable DB6NT design as described in DUBUS magazine. This latter system was compact enough to fit into a small bag and he did this for one of his portable contacts while at Mt Gambier. Chris VK5MC and Trevor VK5NC also entered DB6NT systems.

The general overall standard was very high and judges found it very difficult to make their decisions. Another strong competitor over the years has been Bill VK5WV. This year Bill showed his all valve communication receiver and a reaction type valve receiver much like those built by many of us in the fifties. Bill's love of vintage radio certainly shows in the care he puts into their faithful reconstruction.

The judges commend the competitors and thank our anonymous benefactor who each year contributes $200 towards prizes for this event. Thank you who ever you are.

Judges were Chris VK5MC, Kevin VK5OA, and John VK5DJ. Apologies were received from Eric VK5LP, club patron and usual judge of this event. Eric was absent through ill health.

34 Aitken Street, Millicent, SA 5280

■ Power Supplies

Solar Power — Learning the Hard Way

Ray Turner VK2COX finds that alternative power has its problems, particularly when it needs to be alternating current.*

The following may be of interest to hams heading for the countryside, and anticipating making use of solar energy.

Having purchased a small property out in "the sticks", I was faced with the decision of using solar powered energy to satisfy our electrical needs, or to have the local electrical authorities connect us to their system.

I first checked with the authorities as to how much it would cost to be connected to their grid. Our small home is only 50 metres away from an 11 kV line. The electrical authorities quoted $3,900 to put up a substation on an already existing pole. The substation would consist of a transformer and outlet box and sundry other small bits and pieces. This would still leave us with a 50 metre connection to the house. The authorities also told us that a pole and cables for the additional 50 metres would cost about another $1,100. And that STILL left us with the cost of arranging with a separate contractor to do the final connection. (The local power people have decided "not to compete" with local contractors for this service).

My hackles were well on the way up by then, especially when I learned that the sum total for the substation ($3,900) consisted of about $1,600 for materials, and about $1,200 for labour. Remember this is for the substation only, on an already existing pole, with still 50 metres to go to the house.

I worked out that four men over 4-5 hours could do the job. They wished to charge 36 man-hours. So I decided to go solar, based on the fact that our electricity requirements are small, a couple of 40 watt globes at any one time, and a small freezer. Everything else uses alternative energy. I could also put in a good solar/wind system (including 5 kVA generator for emergencies) for much less that the cost of connection from the 11 kV mains. Also, I would have no bills to pay, apart from a little petrol from time to time.

My intention was to house my solar/wind system in the garden shed, pass it through a 12/240 inverter, and simply "plug the house wiring in". Fine, except that I then found problems with the inverter. The first inverter I tried was the square-wave type, alternating at 50 Hz. It operated most items well, including our small 240 V freezer. But it would not even look at my ham equipment.

My ham gear is 240 V operated, and uses the usual linear (transformer input) type of power supply. I can only imagine that the transformer would pass energy into the secondary only at times coinciding with the leading and trailing edge of each square-wave. This was confirmed when the next inverter I tried was a modified square-wave model (which the manufacturers like to call a "modified sine-wave") having a true peak of about 340 volts and RMS of 240 V. My ham equipment operated to some 60% of its power output capability, vastly better than the square wave version which had a peak/RMS rating of 240 V only.

Even a small power supply (transformer input) which, on the normal mains, put out 500 mA would only give 60 mA when using the modified sine-wave inverter. So the only answer is a true sine-wave inverter. They of course are the dearest of all!

I would be pleased to hear from any member who has had similar experience. I am also on the look-out for a wind generator of 12 volt, 5 amp, at 20 kph capability, or similar.

6/276 Bunnerong Rd Hillsdale NSW 2063
ar

■ Construction

Modified Twist Drills for Sheet Metal

Drew Diamond VK3XU describes some useful hints for the home workshop.*

When used with sheet metals, ordinary jobber twist drills larger than about 5 mm rarely make a nice round hole. Unless the work is clamped securely upon the table of a drill press, and backed with a piece of hardwood, a ragged three cornered or triangular hole is usually what we get. This is because the point breaks through the material before the straight part of the drill has entered the work, allowing the drill to thrash about in the hole, or worse, to catch in the burr. If not properly clamped, the job will spin around dangerously. Here's a crafty method of producing clean round holes, every time.

Before we go further, let me say, we have only two eyes, neither of which is a spare. Always, when using power tools of any kind, wear appropriate

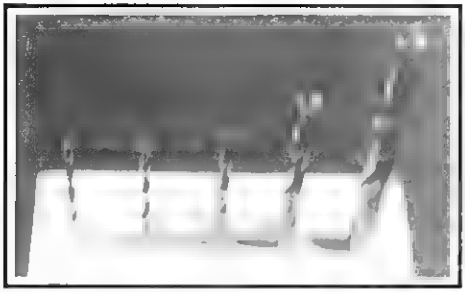


Photo 1 — Torpedo drills.

Photo 2 — Re-grinding the point.

eye protection, such as safety spectacles or goggles. Make it such a habit that you feel "naked" without them. Furthermore, whatever drill type is used, the job should be suitably clamped onto the work table. Do not rely on your ability to grip the job with your fingers. You may damage them, or something else!

Mark the job out as accurately as possible. Black or blue felt tipped pen is ideal as a background medium. Measure precisely and mark with a sharp scriber. Centre-punch where holes are required.

Torpedo (TM) drills are now available from some hardware suppliers (Photo 1). These are a pleasure to use, not only in sheet metal, but also in wood, plastics and thicker metal. They have a built-in pilot drill point, which accurately starts the hole in the punch mark. Then the outer diameter makes contact with the job. Thus, in sheet, removing a washer of waste and thereby producing a truly round hole with very little burring. Torpedo drills are available in sizes from about 3 mm to 13 mm. However, they are costlier than ordinary drills.

Or you can make your own sheet metal drills down to about 4 mm. For example, at Wantirna market I bought a metric set of rather good quality drills quite cheaply. Here's how to convert such a set into sheet metal drills.

Present each cutting edge in turn to the corner of the grinding wheel as shown in Photo 2. With care, an angle-grinder would also serve. Remove sufficient material to achieve the shape shown in Photo 3. The clearance angle should be about the same as for ordinary drills, that is 12 degrees. A line marked on the grinder rest acts as guide. Make sure that the resulting centre pip is 2 or 3 mm longer than the outside cutting edges, which in turn must be equidistant from the centre pip. Test on a scrap of sheet metal backed with wood. As the straight part enters the work there should be no wobble or tendency to grab, and when the outer cutting edges break through you should have a clean round hole with little or no burr.

The fluted twist drills sold as "brad-point" for woodworking are also quite good in aluminium and plastics (but not steel or brass).

Shown in Photo 4 are some demonstration test holes in aluminium. Note the ability to drill a clean hole adjacent to, or even overlapping the circumference of the next hole. Thus, it is easy to cut out large openings in panel work using the "chain of holes" method.

References and Further Reading:

1. Sheet Metal Drills; W R Smith; *Model Engineer*, Nos 3851 and 3853.
2. Large Holes In Sheet Metal; "In Practice"; I White G3SEK; *Radio Communication*, Oct '93.

'45 Gaiters Road, Wonga Park VIC 3115

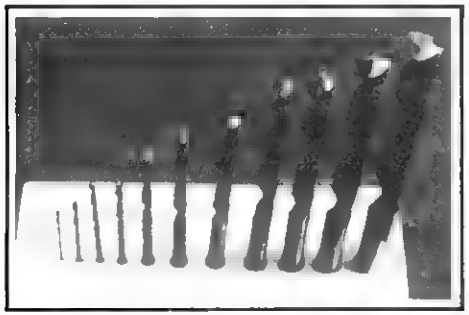


Photo 3 — Modified point.

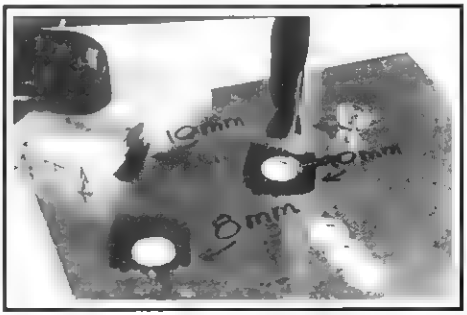


Photo 4 — Testing the drill — note the "chain of holes".

WIA FEDERAL 1994 ANNUAL REPORTS

Most of the 1994 annual reports adopted by the Federal Council of the WIA at the 1995 Annual Federal Convention were published in last month's magazine. Here are the remaining annual reports.

Standards

Electromagnetic interference and electromagnetic (EMI/EMC) compatibility issues were catapulted into prominence in 1994 with the setting of 1 January 1998 as the date for all electrical, electronics and communications equipment to meet set-down compliance standards which are principally based on existing European standards.

Overseeing the compliance regime is Standards Australia who have set a stiff pace in upgrading past standards and developing new ones through their committee system which comprise representatives from related industries.

The Spectrum Management Agency (SMA) signed a memorandum of agreement with Standards Australia which sees the standards organisation taking responsibility for the RF EMI/EMC compliance program. As a result a system of 'EMC Networks' is being set up to provide information and training in EMC (reported in *WIA News*). This is being organised and coordinated by the Australian Electronics Development Centre (AEDC), a Melbourne-based private, industry-funded training centre. The first training courses were announced by TAFE in NSW earlier this year.

Some companies within the telecommunications manufacturing industry sought to have the 1 January 1998 compliance date postponed, and the industry's representative body the Australian Telecommunications Industry Association (ATIA — an affiliate of the Australian Electrical and Electronics Manufacturers Association — AEEMA) approached the Parliamentary Secretary to the Minister for Communications and the Arts, Paul Elliott, in late 1994 seeking to have the date changed to 1 January 1997. They were not successful (reported in *WIA News*).

The electrical and electronics industry, both manufacturers and importers, have responded to the EMI/EMC compliance regime. Specialist companies providing EMI/EMC compliance testing and certification services have sprung up in response.

The rush to commercial cable television has caught the standards community napping however. Cable TV standards are the province of both Standards Australia and AUSTEL, the telecommunications regulatory authority, and development of the necessary standards is running well behind installation of the cable networks. Telstra (Telecom's corporate parent) is in the lead with their roll-out, the pace of which they accelerated late last year, and this, together with the hurried entry of Optus into the cable TV arena at the start of this year, has resulted in plans to manufacture the network cables in Australia. Olex Cables in Melbourne will build a factory and begin supplying cable to Optus and Telstra within a year.

The pace of Cable TV network installation is staggering. By January this year, Telstra's network had passed 100,000 homes Australia-wide, which will rise to 400,000 by year's end. In the main Telstra's system is laid underground, although in some areas where underground cabling is uneconomic for them, they are planning to string the cable between power poles in the street. Optus had a belated start, but is making up for it. They began running cables between street-side power poles in Sydney's western suburbs in February.

The EMI/EMC issues surrounding the cable network, subscriber household connections and set-top converters are best described as being in a hiatus. Despite the fact the cable will carry RF transmissions spanning the 5-550 MHz range, standards and thus EMI/EMC are the province of the telecommunications regulatory authority, AUSTEL.

While I have had a number of discussions with AUSTEL people on the issue, it is apparent that there is considerable ignorance within the authority on EMI/EMC matters. Basically, they're passing the buck to Standards Australia.

Discussions with technical people within Standards Australia have revealed that the pace of network installation and development has far exceeded the development and drafting of relevant standards, including standards related to EMI/EMC. This is not only worrying but somewhat concerning when I learned from both Standards Australia and Telstra's cable TV engineering section that transmission standards — for both analogue and digital technologies — are by no means settled. Even equipment suppliers (eg Philips Electronics Australia) admit to being caught "flat-footed" on this issue, but are probably able to meet equipment needs when decisions are finalised. Telstra has opted for a network design they describe as "substantially future proof". Most of these developments have been reported in *WIA News*.

Probably the greatest potential for interference problems, both from amateur stations and to amateur station operations, is from the set-top converters and subscriber-to-street cable link. There may be some small inherent EMI/EMC threat from street-mounted cable distribution electronics.

On another front, and of particular interest to amateurs, is a new standard for lattice tower masts, which came into force last year (also reported in *WIA News*).

I have sought avenues where the Institute may become involved in input in EMI/EMC and other standards matters. The WIA does not have the resources to participate in the EMC Networks, as they exist, as my approach to the AEDC elicited. However, there may be an avenue through the training sessions presenters and I will approach NSW TAFE on the matter.

Both David Wardlaw VK3ADW and Dr Vince McKenna VK3AOY are active on committees examining standards issues.

Recommendations

The Institute urgently needs someone to fill the vacant EMC Coordinator's position. As there is considerable overlap with the standards environment, it may be possible, for a period, to combine the two positions, although I still see a need for someone to provide the sort of practical information Hans Ruckert so ably sought out and provided in the past. The two roles are possibly too much for a single volunteer, although, should there be two coordinators, there is a need for liaison.

A continuing, and as close as practicable, watch on standards development needs to be maintained, with participation from the institute where it can be obtained.

Roger Harrison VK2ZRH
Standards Coordinator

Media Liaison

The striking thing about the past year's operations has been the escalation in preparation and dissemination of releases necessitated by a range of new pressures, not the least being the amateur fees issue.

The Media Liaison role has been considerably expanded as a result, and now parallels the role of public affairs officers in major corporations, with the need to generate releases for internal (within-Institute) circulation, general media circulation (print, electronic and broadcast), to field press enquiries, organise interviews for regional media with local identities, participate in broadcast and print media interviews, etc.

For the first time, the development and dissemination of general media releases, in addition to those specifically targeting members of parliament, was undertaken, with considerable success.

The press release on the fees issue and amateur radio community reaction to the news of proposed fee rises, was spectacularly successful, as detailed in *Amateur Radio* earlier this year. Likewise, press releases targeting particular members of parliament occasioned some direct responses — particularly from the federal opposition, and effectively countered many mislead ng or specious arguments heard in parliament.

This is not to claim singular responsibility for the (albeit limited) "change of heart" of the government, but certainly bolstered the campaign conducted by the amateur community. The arguments and views put by the peak body certainly carry more cachet than individuals alone. The government and the SMA, after all, have evinced a definite predilection for dealing primarily with the "peak body" among each user community, and their approach is no different with radio amateurs.

Having gained recognition of the Amateur Radio Service by the government as a result of the 6 March 1995 meeting with Parliamentary Secretary to the Minister for Communications and the Arts, Paul Elliott, along with the attention of the opposition and key members on both sides of the house in the Senate and House of Reps, it is contingent on the WIA maintaining the lines of communication.

Material generated for *WIA News* this past year has been put on the amateur packet radio network, and sent to Division broadcast officers, at intervals more frequently than monthly, as had been the past practice. The necessity to keep *WIA News* timely for publication in *Amateur Radio* magazine, as well as the practice of getting prior "approval" from Divisions, together with the incidence of fast-breaking events, has meant some difficulty in meeting *Amateur Radio* publication deadlines. No one appreciates publication deadlines more than I do, and I have on occasion had to arrange for the Assistant Editor to "cut a little slack" here. The cooperation under the circumstances is appreciated — no less so by the members.

Apart from distributing *WIA News* to Division broadcast officers (not ng that not all *WIA News* items get, or got, broadcast — including some important ones regard ng fees and SMA issues), and to the packet radio network, it is clear from a great deal of feedback that there is considerable demand for Institute communications in the form of more-frequent *WIA News*, particularly from non-metropolitan amateur radio clubs, neither the packet network nor Division broadcasts seem sufficient. This is not through any particular lack or limitation, but the wider amateur community does not always have access to these media.

The question arises — is it in the Institute's interest to disseminate *WIA News* more widely in printed form at intervals more frequent than monthly as the need arises? Certainly such action would have gone a long way to counter or pre-empt much of the unwarranted and uninformed comment about and against the Institute and inaccurate assumptions about what the WIA did or didn't do in the matter of fees, let alone other issues. For the critics, talk is cheap.

The lesson learned is this: more information on Institute activities on "representation" matters could

and should be generated. There should be fewer embargoes on such information, as has been the — albeit tacit — policy in the past.

On the issue of putting *WIA News* to the packet radio network, I "inherited" a small group of recipients who take it on disk. Late last year I was asked to put *WIA News* onto the packet network myself. There being no other recourse available, I did so under my own callsign. This seems to have (initially, anyway) "trodden on a few toes", quite inadvertently. While I have done some toe-untreading, a curious artefact remains: multiple copies of *WIA News* under several callsigns doing the rounds. I am endeavouring to find a solution satisfactory to all. In addition, posting it under my callsign, rather than the VK3WIA "official" callsign has engendered comment that readers have more "faith" in it, and appreciation that it comes "direct from the horse's mouth".

Recommendations

1. To continue the Media Liaison position and to take the opportunity to disseminate information and public comment more widely on issues affecting the amateur radio community.
2. Disseminate *WIA News* releases more frequently than monthly and more widely than at present, as the needs demand.
3. To maintain contact with the print and broadcast media and parliamentarians, where it is appropriate to serve the Institute's interests.

Roger Harrison VK2ZRH
Federal Media Liaison Officer

International Beacon Project

At the IARU Region 3 Conference last September in Singapore, Region 3 embraced the International Beacon Project (IBP), which has been established in Regions 1 and 2 over the past 15 years. Brief details of the Region 3 decision and its implications for Australian amateur radio were included in the IARU Liaison Officer, Kevin Olds' (VK1OK), report in the October 1994 issue of AR.

The IBP began with beacons on 14,100 kHz initially, later expanding to three-band beacons on 14, 21 and 28 MHz. More recently, five-band beacons (14, 18, 21, 24 and 28 MHz) are being added to the network, replacing older beacons in some locations. An article on the network, its history and current operations was published in the October and November 1994 issues of *QST*.

The beacons serve as HF propagation "indicators" and for various propagation investigation or research purposes. With the network well established, the next phase of operations is to encourage propagation investigation and research.

The beacons are based on standard commercial amateur transceivers of the same or a milar type, transmitting in an accurately timed sequence, each beacon being allocated a time "slot". On each frequency, they transmit a CW identification and then a series of key-down sequences at power levels of 100, 10, 1.0 and 0.1 watts. This permits the determination of path loss and propagation characteristics.

The only IBP beacon in Region 3 to date has been JA1IGY in Japan.

At the February 1995 Institute meeting, the position of IBP Coordinator was created, which I was appointed to fill. At the 1994 Region 3 Conference, I made initial application for the position of Region 3 IBP Coordinator and the Institute agreed at the February meeting to endorse my application and subsequently notified the Region 3 Secretariat.

The IARU IBP Coordinator is John G Troster W6ISQ, who resides in Belbrook, California. The proposal put in a Conference Paper to the 1994 Region 3 Conference was for one, or possibly two, beacons in Australia and one in New Zealand, plus one in West Asia and another in South East Asia. Sri Lanka "adopted" one (funded by Region 3) and Chinese Taipei (Taiwan) will install the other. The NZART delegation indicated they proposed installing a beacon in NZ, while the WIA delegation proposed to explore the possibility of installing one or two here.

The "prime" site favoured for Australia is in West Australia — Perth, or environs, to be precise. The additional site is in the East, Sydney or environs being the suggested location.

Since my appointment in February, I have written to John Troster advising him of my appointment and providing cogent reasons for having two operational beacons on either side of the Australian continent. I'll detail these in a future report. Following a VK6 Division meeting in Perth at which President Neil Penfold VK6NE outlined brief details of the IBP, a number of local amateurs expressed enthusiasm for the project. It was suggested one of the Perth universities would make a suitable location. Neil has supplied me with names so I can make further contact.

Regarding a Sydney location, opposition expressed by the appointed VK2 Division Dural Officer, David Horsfall VK2KFU/VK2ZTB (before any approach was made to see if Dural would be suitable or available), led me to seek another suitable site and I have received favourable encouragement from a federal government department which controls a site in the rural region West of Sydney. Two secondary sites are possible: both in the rural West, one university owned, the other owned and operated by another federal government department.

The next step is funding, followed by provision for long term maintenance arrangements. Basic cost is US$2500 per beacon and controller (through John Troster). Antenna and installation costs are additional. Typically, vertical antennas are used for omnidirectional radiation.

The Region 3 IBP Coordinator's personal costs are funded by the Region 3 Association, which includes travel to each Region 3 Conference at the Association's expense. Should I be appointed by Region 3 to this position, the WIA would thus gain one delegate for each Region 3 Conference fully-funded at no (direct) cost to the Institute.

Recommendations

As the IBP benefits all amateurs, and particularly bolsters the Amateur Radio Service's position in justifying its HF allocations at the ITU level (and would provide good argument in current government-SMA negotiations), it is within the scope of the Federal WIA's Memorandum of Association, and likewise the seven Divisions', to provide funding in some form or other. This leaves it open to funding being part a Federal part a Divisional responsibility. It might be that donations from the wider (non-member) amateur community should be sought — and even the equipment supplier community.

As I see it, the options are:

1. Capital and recurrent costs fully funded by the Federal WIA (all Divisions share the costs).
2. Only capital costs fully funded by the Federal WIA, with recurrent costs funded by the relevant Division (perhaps shared with a local affiliated club).
3. Capital costs funding raised through a donation drive "seeded" by a Federal WIA (or Federal plus Divisional) capitation. Recurrent costs as per (2).

The object would be to have at least one, and preferably both, beacons operating by the next Region 3 Conference in 1997 (Beijing).

Postscript

A fax from John Troster W6ISQ on 2 May, advises that the beacon equipment is, in fact, donated so any consideration of capital costs is now unnecessary, only installation and recurrent costs need be considered, which makes the project that much more viable.

The President of the NSW Division, Michael Corbin VK2YC, has invited a submission for siting a beacon at Dural, to be considered by the NSW Council. A submission was faxed to the Division on 1 May.

Roger Harrison VK2ZRH
Australian Coordinator, International Beacon Project

Australian Naval Amateur Radio Society Highlights

ANARS achieved the highest growth rate of any naval amateur radio society in the world.

We have been approved by the director of Naval Corporate Management (with specific permission to use the word "naval" in our title) and recognised by the Department of Defence, Royal Australian Navy, the Naval Association of Australia, the Navy League, the Association of (war)ship societies and the Corvette Association.

We have become only the second national amateur radio society to be affiliated to the federal WIA (the other is ALARA). Overseas we have been recognised and accepted by the British RNARS, the German MF-Runde, Dutch MARAC, Italian INORC, Romanian YO-MARC and the American SOWP.

We are the largest naval Amateur Radio Society in Australia (by a factor of at least two). Frequent publicity has been achieved in *Amateur Radio, Amateur Radio Action, Electronics Australia, Silicon Chip, Corvette and Navy News*.

Our society has maintained a high public profile by staging displays at the Riverina Field Day, Gold Coast Hamfest, Wyong (Gosford) Field Day (for the second year running), BARCfest, Moorabbin Hamfest, Summerland Hamfest and the Riverina Field Day (for the second year running), the Shepparton Communications Day, Gympie Hamfest, Ballarat AR Convention, Adelaide Hills Hamfest, Northern Corridor (Perth) Hamfest as well as return visits to the previous venues.

The special event station VI4VHF was staged to mark the de-commissioning of HMAS Moreton. Four editions of our newsletter QUA-ANARS were published in the first year. The standard began high and has steadily improved, making QUA one of the best club newsletters in the country. Commodity trading has been run at a profit (although the Hon Secretary would like to sell more stock). Our commodity purchases have been kept below 25% of assets in order to maintain adequate cash flow.

All in all, not a bad start. Sincere thanks to the retiring committee, VK2ALG, VK4CY, VK3EUL, VK6APW, VK2BBE, VK2GWE, VK2NCE, VK4GY, L20508 AND VK3QU for a job well done.

New Committee

The new ANARS committee is Terry Clark VK2ALG Honorary Secretary; Jon Walton VK4CY Honorary Treasurer; Ian Fraser VK2UG, Barry Bennetts VK2BBE, Peter Saunders VK6APW, Jeff Fletcher VK3EUL and John Garvey VK5OJ. Barry VK2BBE is the "HMAS Canberra memorial" award custodian.

In accordance with our constitution, I have been nominated by the committee for a second term as Chairman.

G C Dunstan VK1XX
Chairman ANARS

Book Review

The ARRL UHF/Microwave Projects Manual

Published by the American Radio Relay League
Reviewed by Norm Eyres VK3ZEP and Bob Tait VK3UI

This new book covers everything from 1.2 GHz to Optical communications. Yes, that's right. There is even a light wave transceiver project using Laser diodes. There is also an infra-red (IR) transceiver if you want to try something different.

The idea of this publication, according to the many authors involved, was to provide modern designs that would remain useable for many years to come.

Some of the designs are well proven. Detailed drawings, circuits and photographs provide the reader with easy to follow construction details Some of the practical projects in this book give details of where to obtain special components and printed circuit boards.

If you have never played with microwave before there are many hints and tips and safety precautions to follow. You can "roll your own" without getting into too much trouble.

We would thoroughly recommend this book to anyone even remotely interested in microwave construction projects. Think of a question on the subject and you will find the answer in this excellent publication

It is very good value at $52.00. The order number is BR55 and may be obtainable from your Divisional Bookshop. The review copy was supplied by Daycom Communications Pty Ltd. **ar**

WIA News

Beacons Aid 80 m DX

As the solar cycle slides into the minimum, European beacons on 80 m may prove useful as a propagation aid for 80 m DXers.

A recent issue of International Amateur Radio Union (IARU) Region 1 News lists current HF beacons operating in Region 1, including one in Germany and one in the Czech Republic.

Martin Harrison G3USF, Region 1 Coordinator for the IARU International Beacon Project, maintains a list of Region 1 HF beacons which he makes available on the Internet. If you're on the World Wide Web, you can reach Martin at poa01@keele.ac.uk.

The 80 m beacon in Germany is DK0WCY, on 3558 kHz. Located at Scheggerott (locator JO44VQ), it runs 25 watts erp to a dipole. Identifying in CW (A1), it operates between 0700-0800z and 1530-1700z.

The Czech 80 m beacon is OK0EN, on 3600 kHz. Running only 0.1 watt erp to a dipole, it's unlikely to be heard here.

DK0CWY is also on 10.144 kHz, running 30 watts erp to a horizontal loop, operating 24 hours a day. (Thanks to John VK4QA, and Martin G3USF).

ALARA

Sally Grattidge VK4SHE, ALARA Publicity Officer*

ALARA is Twenty This Year

I wonder what the small group of ladies who formed LARA back in 1975 would think of ALARA now. We have over 200 members, many of them from other countries, sponsored by VK girls. ALARA is recognised by other YL organisations all over the world. They didn't know what they had started when they held that first meeting.

To celebrate that beginning, birthday luncheons are held in several states each year in July, and we run a special Activity Day on the Saturday nearest to the date of that first meeting (26 July 1975). Activity day this year is Saturday, 22 July. The times are 0900 to 1300 UTC, and the frequency is 3.588 MHz +/-. Do try to participate. It is very lonely for those who are there if no one answers their calls.

This special 20th year will be acknowledged at the birthday luncheons, but the committee agreed that celebrations should be continued into next year when the ALARAMEET in Perth will be held during the 21st birthday year. We realise that only some of us can actually be in Perth at that time, but to be together will make it special, and those who are there will hold all the others in their thoughts so they can share the 21st "party". *(How about a special callsign/station so those who cannot make it to Perth can call in and say "Happy Birthday"? VK4SHE)*

The VK3 birthday celebration will be held on 14 July 1995 at our usual venue, the Vista Cafe in Little Collins Street, Melbourne (next door to the Victoria Hotel). Our birthday lunch falls during the school holidays this year so we hope it will be possible for most people to come and join us, from 11 am onwards.

In VK5 the gathering will be on Sunday, 30 July 1995 at the same venue as has been used for the last couple of years (visitors contact VK5CTY for details). The OM lunch will also be held at its usual venue and the coffee finale will no doubt also occur.

The VK6 ladies gather for lunch on the fourth Thursday each month at the Hyde Park Hotel in North Perth (contact Poppy VK6YF). The group, including licensed ladies and those interested in radio, celebrate the formation of the lunch group in June, and will celebrate ALARA's birthday at the same time.

Christine Taylor VK5CTY

Is ALARA Really Necessary?

While reading some of the YL histories, I came across a comment which made me stop and think. The writer questioned the value of ALARA, arguing that having a separate organisation is counter-productive, in that we cease to be just amateurs like everyone else, and become a different group.

I can well appreciate the early YLs feeling this way, as they had to make considerable efforts to be accepted into the amateur fraternity, and prove that a woman was capable of passing the tests required to gain a licence. Why go to such lengths to attain equality, and then stand up and declare you are different? Maybe that is what equality is all about, not being the same as everyone else but being accepted while being different.

Becoming an amateur has given me my first taste of being labelled as belonging to a minority group. As I am not aware of any discrimination or persecution, this is not a problem. I regard ALARA as an interest group, rather than a separate organisation. Like other groups, such as the Old Timers, ALARA makes it easier for me to meet and talk to people with similar interests.

It would be interesting to hear comments from members and non-members regarding the value of ALARA.

Sally Grattidge VK4SHE

New Callsigns

Congratulations to Jean VK5TSX, and Deb VK5JDM.

News From the West

Bev VK6DE has been on the road again covering great distances, including Tasmania which she found particularly enjoyable. Plans are going ahead for the ALARAMEET next year and the details we are all waiting for will be in the October newsletter.

Annual General Meeting

There were 16 members on the net for the AGM of ALARA held on Monday, 22 May 1995 near 3.580 MHz at 1030 UTC. The election of Office Bearers was as follows, all nominees being unopposed.

We have all heard of the travels of Maria VK5BMT and Keith VK5MT, and most of us know that they have a mainly solar powered set-up. This is the car and its array at Dalhousie Springs in SA.

The Barossa Picnic is held on the last Sunday in March at the Mount Pleasant Oval. It usually clashes with the Walk Against Want which is frustrating for WICEN organisers but, because of commitments for cricket and football, that is the only weekend available. Left to right, Marilyn VK3DMS, Sue Mahoney, Meg VK5AOV, Christine VK5CTY.

Welcome to all new and returning office bearers, and thanks to all who held office last year for work well done. A Minute Secretary is urgently needed, preferably someone who can hear what is going on! Special thanks to Christine VK5CTY for taking on the role of president for another year, and Judy VK3AGC who is frequently called on to relay for the more distant stations.

DRL News

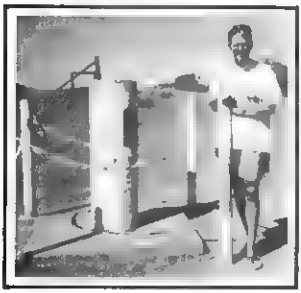
The District Radio Ladies (VK4DRK — Rockhampton) have changed their net times to the first Thursday of the month on 146.900 MHz at 2000 hrs EST, and 3.565 MHz (+/-) at 2030 hrs EST. The DRLs had a night out in Gladstone in June, when they saw Pam VK4PCP performing in "Les Miserables".

Robyn VK4RL
C/o PO Woodstock, QLD 4816
ar

Executive: President, Christine Taylor VK5CTY; Senior Vice-President, Judy Atkins VK3AGC; Junior Vice President, Bev Clayton VK4NBC; Secretary, Bron Brown VK3DYF; Treasurer, Margaret Schwerin VK4AOE; Publicity Officer, Sally Grattidge VK4SHE; Newsletter Editor, Dorothy Bishop VK2DDB

Office Bearers: Historian, Deb Matthews VK5JDM; Awards Custodian, Jessie Buchanan VK3VAN; Contest Manager, Marilyn Syme VK3DMS; Sponsorship Secretary, Gwen Tilson VK3DYL; Souvenir Custodian, Margaret Schwerin VK4AOE; Librarian, Kim Wilson VK3CYL

State Representatives: VK1/VK2, Dorothy Bishop VK2DDB; VK3, Bron Brown VK3DYF; VK4, Robyn Pye VK4RL; VK5/VK8, Meg Box VK5AOV; VK6, Bev Hebiton VK6DE; VK7, Helene Dowd VK7HD.



Maria VK5BMT at Cameron's Corner where New South Wales, Queensland and South Australia meet (29° S, 141° W).

AWARDS

*John Kelleher VK3DP — Federal Awards Manager**

I am pleased to see that my continual suggestions about local awards have at last begun to bear fruit. From all our friends at WIAQ comes the Worked All *Queensland Award*. I can openly recommend this award. In fact, I will recommend any Australian award which will promote general activity and serve to publicise any portion of this fine country!

This award is divided into two sections, Worked all Cities and Towns, and Worked all Shires. There are 23 incorporated Cities and Towns in Queensland: BN Brisbane, BU Bundaberg, CA Caloundra, CS Cairns, CT Charters Towers, DY Dalby, GC Gold Coast, GD Gladstone, GI Goondiwindi, GY Gympie, HB Hervey Bay, IP Ipswich, LC Logan, MB Maryborough, MC Mackay, MI Mount Isa, RC Redcliffe, RH Rockhampton, RM Roma, TH Thuringowa, TO Toowoomba, TV Townsville, WA Warwick.

The initial award is for 15 contacts. A silver sticker is issued if ALL Cities and towns are successfully worked.

There are presently 108 shires in Queensland:

AA Allora D, AC Aramac, AL Albert, AN Arakun (R), AT Atherton, BA Banana, BC Barcaldine, BD Bendenere, BE Burnett, BG Biggenden, BH Bauhinia, BI Bungil, BK Burdekin, BL Balonne, BO Booringa, BO Barcoo, BP Bulloo, BR Burke, BS Broadsound, BT Beaudesert, BV Boonah, BW Bowen, BX Blackall, BY Belyando, BZ Boulia, CB Caboolture, CD Cardwell, CF Clifton, CH Chinchilla, CK Cook, CL Calliope, CM Cambooya, CN Crows Nest, CO Cooloola, CP Carpentaria, CR Croyden, CY Cloncurry, DG Douglas, DI Diamantina, DL Dalrymple, DU Duaringa, EA Eachham, ED Eidsvold, EK Esk, EM Emerald, ET Etheridge, FL Flinders, FZ Fitzroy, GH Gayndah, GL Glengallan D, GM Gooburrum D, GT Gatton, HK Hinchinbrook, HT Herberton, IF Isisford, IL Ilfracombe, IS Isis, IW Inglewood, JE Jericho, JO Johnstone, JY Jondaryan, KG Kingaroy, KK Kilkivan, KO Kolan, KY Kilcoy, LA Laidley, LO Longreach, LV Livingston, MA Mareeba, MC Mackay *, MG Mulgrave, MH Murweh, MK McKinlay, ML Milmerran, MM Mount Morgan, MN Mirani, MO Maroochy, MR Moreton, MT Monto, MU Mundubbera, MV Miriam Vale, MX Murilla, MY Murgon, MZ Mornington (R), NE Nebo, NN Nanango, NO Noosa, PD Peak Downs, PI Pioneer D, PO Paroo, PR Pine Rivers, PT Pittsworth, PY Perry, QL Quilpie, RD Redland, RI Richmond, RL Rosenthal D, RO Rosalie, SA Sarina, ST Stanthorpe, TA Tara, TB Tambo, TE Torres, TI Tiaro, TM Taroom, WA Warwick *, WC Woocoo, WD Wondai, WE Widgee D, WG Waggamba, WH Whitsunday, WI Winton, WN Woongarra D, WO Wambo, WR Warroo.

(R) Restricted area for radio transmissions — permit required

** Town, City, and Shire.*

D Deleted as from 1 July 1994.

The initial award is for 51 contacts, and stickers for 61, 71, 81, 91 and 101 shires may be claimed. A Gold sticker is available for working ALL Shires.

The Rules

Only one certificate is issued, and is updated when additions are received. Any SWL or transmitting amateur may apply for this award. All modes and bands may be used. Cross-band contacts are definitely not allowed.

Special VK ruling. As a number of areas are not normally very active, expeditions to these areas are encouraged. A copy of your portable log can be forwarded to the Queensland Awards Manager for use as a check list. The VK/P operator will automatically be credited with "having worked" that particular area if and when he has successfully worked at least 10 (ten) different stations from that area.

To apply for this award, submit a certified log extract, and a fee of $5.00 or five IRCs, to: The WIAQ Awards Manager, GPO Box 638, Brisbane, QLD 4001, Australia.

Please note that upgrade stickers are issued free.

Contacts made as from 1 January 1976 will be valid for this award, with the exception of Arakun, Burnett Shire, Caloundra City, Cooloola Shire, Hervey Bay Town, Logan City, Mackay Shire, Mornington, Thuringowa City, Warwick Shire, and Whitsunday.

After 1 June 1981, contacts with Arakun, Mornington, Hervey Bay Town, and Logan City will be accepted. The following were added later: 1 January 1986, Thuringowa City, 19 December 1987, Caloundra City; 1 September 1989, Whitsunday.

Warwick Shire now combines Allora, Glengallan and Rosenthal Shires, and Warwick City as from 1 July 1994. From the same date, Cooloola Shire now consists of Gympie City and Widgee Shire. Burnett Shire now incorporates Woongarra and Gooburrum Shires and, finally, Mackay Shire now consists of Mackay City and Pioneer Shire.

With a start date of 1 January 1976, this award should be easy to earn. Some of the locations mentioned above are steeped in Australian history and culture.

The Diplom Sveridge

Evert Kallander SM5BDY, the Swedish Diploma Manager, suggests that *The Diplom Sveridge* is that country's equivalent of Britain's WAB, or the USA Counties Award. This award is issued by Nykopings Sandareamatorer/NSA or the Nykoping Amateur Radio Club, and is valid from 15 June 1978. SWL stations may also apply.

The basic diploma is issued for contacts with a minimum of 100 different parishes, regardless of region. The total number of parishes in Sweden is 2543. Additional stickers and plaques are subsequently issued up to the final total. Norrland — SM2, SM3 (271 parishes); Svealand — SM4, SM5, SM0 (759 parishes); Gotaland — SM1, SM6, SM7 (1513 parishes).

All bands and modes are permitted. Stationary, mobile and portable contacts are recognised. QSL cards are not required, but the Club reserves the right to examine log entries.

The Record Book, bearing its registered number, contains a list of all parishes in Sweden, and may be obtained from NSA Diploma Manager, Box 25, S-611 22 Nykoping, Sweden. Cost of the Record Book is SEK 120 or $US18 or 20 IRCs. Full documentation for the award is contained in every copy of the Record Book. The Club would prefer that applications be in this book, but will accept a certified list of worked stations and parishes.

The fee for the basic diploma is $US5.00 or five IRCs. Many SM stations have their parish number printed on their QSL cards. If not, perhaps the Diploma Manager can fill the empty spaces for you.

**PO Box 2175 Caulfield Junction 3161*

Club Corner

Eastern and Mountain Districts Radio Club Inc

EMDRC Inc held its Annual General Meeting on Friday, 2 June 1995. The new committee for 1995/96 is President, Jack VK3WWW; Vice President, Carl VK3EMF; Secretary, Max VK3WT; Treasurer, John VK3ZJH; General Committee, Len VK3COD, Ernie VK3FCX, Dave VK3KAB, Chris VK3KCP and Chris VK3XGT.

For more information about the club, please contact Jack VK3WWW on (AH) 03 9873 2459.

Jack Bramham VK3WWW
President

Moorabbin and District Radio Club

The MDRC Annual General Meeting will be held on 21 July 1995 at the Combined Clubs, Turner Road Reserve, 33 Turner Road, Highett. For further information, please telephone (03) 9704 3655. Election forms will be left at the club rooms.

Gerry Viscal

Radio Amateurs Old Timers Club

Membership is increasing and, as at the end of June, we have seven members who have notified the Secretary that they are 90 or more years old and are now listed as Honorary Life Members. As a matter of interest they are Alan Vagg VK3AVG, Arnold Lawrence VK3BHI, Bill Sievers VK3CV, Frank Clarke VK3FC, Alf Chandler VK3LC, Norman Hurrl VK4HH and Leith Cotton VK5LG.

If you are a member, and have reached the age of 90, please send a note to Arthur Evans VK3VQ at 237 Bluff Road, Sandringham, VIC 3191. (NB: Our records do not show date of birth.)

50th Anniversary Celebrations — Return of Amateur Licences

Herb Stevens VK3JO, who started people thinking about finding a way to celebrate the post war return of amateur radio licences in 1995, reports that the response to our request for information about stations who resumed transmitting after WW II has not been up to expectations. However, we acknowledge with thanks the following contributions from log books, all on 28 MHz. VK3DH-VK3VM, 22/12/45; VK3BQ-VK3DH, 26/12/45; VK3YP-VK3DH, 26/12/45; VK3VQ-VK3HT, 15/1/46, VK3RZ-VK3JT, 2/1/46; VK3NW-VK2NY, 22/1/46; VK2AHJ-VK2VP, 15/3/46.

George VK2AHJ also sent photocopies of the telegram dated 2 September 1939 from the director General of Posts and Telegraphs directing him to *"cease all transmissions and disconnect valves, transformers, tuning coils, operating keys and microphones"*. A separate letter of 5 September 1939 reads *"Further to telegram of 1st Sept 1939, will you please note that your aerial, if especially designed for transmitting, must also be dismantled."*

VK2RP and VK2UB have sent written advice that their first post war QSOs were made on 18/5/46 and 16/2/46 respectively, VK2UV contacting VK2ALP.

VK3BG has contributed a paper entitled "An Anniversary to be Remembered" published elsewhere in this issue.

At this time we have no information of operations prior to those of VK3DH/VK3VM on 22/12/45. The main object of gathering this information is to use it in an article commemorating the 50th anniversary of the resumption of amateur activity, for publication in *Amateur Radio* in November/December this year. Any problems encountered recovering impounded gear would also be an acceptable contribution. Please send

all information to Herb Stevens VK3JO who is QTHR

Incidentally, we are delighted to see that a suggestion made to the Federal Contest Manager, Peter Nesbit VK3APN, has been accepted. In this year's Remembrance Day Contest it will be optional to call *CQ RD 50*. That's great news.

Allan Doble VK3AMD

Summerland Amateur Radio Club

Computer Expo

The most successful Summerland Computer Expo was held on Saturday, 27 May in the Lismore City Hall.

Sponsored by the Summerland Amateur Radio Club, this was the third and best Expo held so far with over 1000 people inspecting displays by 20 exhibitors. Most exhibitors were local but ranged from Grafton to Brisbane.

The latest computer developments were presented.

Over 20 Club members, family and friends were involved in running the Expo which is held twice a year, the next to be in November.

Radio Assistance to Australian Red Cross

The Lismore Disaster Welfare Committee conducted an Evacuation and Registration Exercise on Saturday, 3 June 1995 using the Evacuation Centre in the Union Building of the Southern Cross University.

The Summerland Amateur Radio Club provides comms assistance to the Red Cross and took part in the exercise. The situation was that extensive fires in South Lismore had caused the evacuation of about 250 persons. These were to be registered and cared for at the Evacuation Centre. Our task was to set up a comms centre at the EC and have a mobile with a Red Cross person in the evacuation area.

We used the chance to test our call out, Commcentre set up, equipment and propagation from the site to difficult points around Lismore. Six club members, VK2s EA, DLR, DIL, XVR, XKX and JWA took part. Five of these are also WICEN members.

The exercise from 0830 to 1100 was followed by a debrief all around. Everything worked well but our location could become too noisy. In an air conditioned building, most windows, etc do not open thus restricting cable runs.

Propagation was satisfactory to all points tried and the backup crossband rig worked OK. Thanks to all who assisted.

J W Alcorn VK2JWA

AMSAT Australia

*Bill Magnusson VK3JT**

National co-ordinator
Graham Ratcliff VK5AGR
Packet: VK5AGR@VK5WI
AMSAT Australia net:
Control station VK5AGR
Bulletin normally commences at 1000 UTC, or 0900 UTC on Sunday evening depending on daylight saving and propagation. Check-ins commence 15 minutes prior to the bulletin.

Frequencies (again depending on propagation conditions):

Primary 7.064 MHz (usually during summer).

Secondary 3.685 MHz (usually during winter).

Frequencies +/– QRM.

AMSAT Australia newsletter and software service
The newsletter is published monthly by Graham VK5AGR. Subscription is $30 for Australia, $35 for New Zealand and $40 for other countries by AIR MAIL. It is payable to AMSAT Australia addressed as follows:

AMSAT Australia
GPO Box 2141
Adelaide SA 5001

To Flip or Not To Flip

Computerised automatic antenna tracking devices are common these days and they vary from the ubiquitous *Kansas City Tracker* to various free standing "Track-boxes". Most have a feature which is generally referred to as a "flip" option. This is designed to overcome a problem inherent in all common rotators. They are 360 degree devices and, for stations in the southern hemisphere, they are set to stop mechanically at south.

If the path of the satellite you are tracking crosses south the rotator will try to move from (say) 179 degrees to 181 degrees. To do so it will have to cross the mechanical stop and of course it can't do that. So off it goes around the other way on an almost 360 degree excursion to get to 181 degrees. This usually takes about a minute and during this time the signal will be lost. In the case of the digital data birds, data will be lost. If you are in QSO you will probably lose contact. If you are tracking a weather satellite the software will paint an annoying series of black lines across the picture.

With the "flip" option turned on and a particular satellite selected, the software does a quick scan of the up-coming pass. It looks to see if the satellite is going to cross the mechanical stop. If this appears likely the track box flips the antennas over 180 degrees in elevation, that is upside down, and turns the azimuth rotator around 180 degrees. This brings the antennas back to where they were pointing originally but now the rotators can move freely through the 180 degree point that would have stopped them without the flip.

The solution, however, presents the operator with another problem and, because of this, many operators do not turn on the flip option. The problem is to do with the winding up of feed lines. It can be difficult to arrange the feed lines so the "flipping over" does not tangle them. Difficult but by no means impossible. The temptation is to run the feed line down the antenna boom to the rotator boom and along to the rotator. This will surely distort the Yagi radiation pattern and all good text books warn against this practice.

I wrestled with this problem and came up with an answer. I use the fine tip section from a fibreglass fishing rod cut to about a metre or so and bound to the reflector end of the Yagi so that it sticks out behind the antenna. The feed line can be run along the antenna boom and taped along the fibreglass rod. This gets it out of the way of the antenna in a gentle arc so that it can be brought back up to the rotator boom, wound around it once or twice and then formed into a circular loop around the rotators. With a bit of thought you can do this quite successfully and the flip option is well worth the trouble.

Computer Time Setting Program

I came across an excellent piece of shareware recently. AccuSet 3.5 is designed to work with a telephone modem and the Telecom computer time setting service which is available in all capital cities. Many such services exist around the world and AccuSet seems to accommodate them all. It is Windows based and can be fully automated to work each time you switch on or go into Windows.

It calculates the error rate of your hardware clock and can be set to automatically or manually correct this either from its own records or periodically by re-synchronising with Telecom. It will graphically display the error rate to indicate long term and short term variations. It has a screen display giving the present computed time, the estimated correct time and the daily error rate. You can configure it for any Telecom service

and can display the times in any six world cities from a data base containing 3000 entries. I find it useful for this feature alone as each entry has the city latitude/longitude given

AccuSet will remind you that it is time to re-synchronise with Telecom after a set number of internal updates. I have tried a number of these programs and this is by far the best. The author maintains a support BBS where the latest version can be down loaded. The BBS is located in Pennsylvania and the ISD number is 0011 1 717 732 4067 There is a professional version available which includes a number of features useful to amateur astronomers.

Yet Another Keplerian Element Format Change

Not long ago, in a galaxy quite close to home, a lot of amateur satellite tracking software was thrown into mild confusion. USSPACECOM, who supply two line keps to government agencies, decided to change the format slightly. The bad news is, it's happened again. The good news is that the keps reaching us from most amateur radio sources have been worked on to correct any problems and this time some tracking programs don't seem to mind the changes anyway.

Word is that USSPACECOM will re-introduce the check sum soon but may retain some of the other changes. I guess time will tell. Just be careful and, if you have any problems, seek another source of keps. The AMSAT format should not have changed in any way as these are treated by AMSAT-NA before release. The keps I receive from CompuServe are OK. The Goddard Space Centre BBS has discontinued publication of the two line elements in zipped format due to changes in Internet access restrictions for government installations. The keps arriving from the US through various packet radio sources seem to be OK at present.

Six Monthly Amateur Radio Satellite Frequency and Mode Update

Here is the latest update of current amateur radio satellite frequencies and modes. I have simplified the list by removing all reference to satellites that are defunct and listing only the mode A transponders on the three most popular Russian RS satellites. For full details refer to the January 1995 column.

Satellite	UPLINK (MHz)	DOWNLINK (MHz)
Oscar 10 (AO-10)		
General Beacon (Carrier only)		145.810
Engineering Beacon (irregular and garbled)		145.987
Mode B (SSB,CW-Inverting)	435.030-435.180	145.825-145.975
Oscar 11 UoSAT-2 (UO-11)		
Beacon (1200 AFSK,FM) telemetry only		145.826
Beacon (1200 AFSK,FM) telemetry only		435.025
Beacon (1200 AFSK,FM) carrier only		2401.500
Radio Sputnik 10 (RS-10)		
Mode A (SSB,CW-Inverting)	145.86-145.90	29.360-29.400
Beacon/Robot (CW)		29.357
Beacon/Robot (CW)		29.403
Robot Mode A (CW)	145.82	29.357 or 29.403
Radio Sputnik 12 (RS-12)		
Mode A (SSB,CW-Inverting)	145.91-145.95	29.410-29.450
Beacon/Robot (CW)		29.408
Beacon/Robot (CW)		29.454
Robot Mode A (CW)	145.831/.840	29.408 or 29.454
AMSAT-OSCAR-13 (AO-13)		
General Beacon (400 BPSK,CW,50 Baud RTTY)		145.812
Mode B (SSB,CW-Inverting)	435.420-435.570	145.825-145.975
Mode S (SSB,CW,FM)	435.601-435.639	2400.711-2400.747
Beacon (PSK) ON 1st 2 MA counts of "S" time		2400.664
Radio Sputnik 15 (RS-15)		
Mode A (SSB,CW non-invert)	145.858-145.898	29.354-29.394
Beacon (CW)		29.352.5
AMSAT-OSCAR-16 (AO-16) Callsign = PACSAT		
Mode J (1200 BPSK BBS,FM-SSB)	145.90/92/94/96	437.025 or 437.050
Mode S (1200 BPSK BBS,FM-SSB)		2401.1 or 2401.1428
AMSAT-OSCAR-17 (DO-17) (Dove)		
Beacon 1 (1200 bps AFSK,Digital Voice,FM)	145.82516	
Beacon 2 (1200 bps AFSK,Digital Voice,FM)	145.82438	
Beacon 3 (1200 BFSK,Digital Voice,SSB)	2401.2205	
AMSAT-OSCAR-18 (WO-18) (Webersat)		
Mode J (1200 BPSK,RC,SSB)	144.30-144.50	437.075 or 437.10
ATV (TV,AM)	1265.000	
AMSAT-OSCAR-19 (LO-19) Callsign = LUSAT		
(1200 PSK,FM-SSB)	145.84/.86/.88/.90	437.15355 or 437.1258
FUJI-OSCAR-20 (JAS-1b) (FO-20) Callsign = 8J1JBS		
Beacon JA (CW,Analog)		435.795
Code JA (SSB,CW)	145.90-146.00	435.80-435.90
Beacon JD (CW)		435.910
Mode JD (1200 BPSK,FM-SSB)	145.85/.87/.89/.91	435.910
UoSAT-OSCAR-22 (UO-22) Callsign = UoSAT5		
Mode JD (9600 Baud FSK,FM)	145.90/.975	435.120
KITSAT-OSCAR-23 (KO-23) Callsign = HL01		
Mode JD (9600 Baud FSK,FM)	145.85/.90	435.175
KITSAT-OSCAR-25 (KO-25) Callsign = HL02		
Mode JD (9600 Baud FSK,FM)	145.980	436.500
ITAMSAT-OSCAR-26 (IO-26) Callsign = ITMSAT		
Mode JD 1200 baud PSK	145.875	435.867
	145.900	435.822
	145.925	
	145.950	

359 Williamstown Rd, Yarraville VIC 3013
Packet: VK3JT@VK3BBS #MEL VIC.AUS.OC
CompuServe 100352,3065
ar

Help stamp out stolen equipment — always include the serial number of your equipment in your Hamad.

Contests

Peter Nesbit VK3APN — Federal Contest Coordinator

Contest Calendar, July-September 1995

Jul 1	Australasian Sprint 80 m CW	(Jun 95)
Jul 1	Jack Files Memorial 80 m CW	(Jun 95)
Jul 1	West Australian 80 m CW	(Jun 95)
Jul 1	NZART 80 m Memorial Contest	(Jun 95)
Jul 1	Canada Day CW/Phone	(Jun 95)
Jul 1/2	Venezuela SSB DX	(Jun 94)
Jul 8	Australasian Sprint 80 m Phone	(Jun 95)
Jul 8	Jack Files Memorial 80 m Phone	(Jun 95)
Jul 8	West Australian 80 m SSB	(Jun 95)
Jul 8/9	IARU HF Championship	(Jun 95)
Jul 22/23	Venezuela CW DX	(Jun 94)
Jul 22/23	SEANET CW DX Contest	
Aug 5/6	YO DX Contest	(Jul 94)
Aug 12/13	Remembrance Day Contest	
Aug 12/13	Worked All Europe CW	
Aug 12/13	SARTG RTTY Contest	
Aug 19/20	SEANET SSB DX Contest	
Aug 19/20	Keyman's Club of Japan (CW)	
Sep 2/3	All Asia DX Contest Phone	(May 95)
Sep 2/3	Bulgarian DX Contest	
Sep 9/10	Worked All Europe Phone	
Sep 16/17	SAC DX CW	
Sep 23/24	SAC DX Phone	
Sep 23/24	CQ WW RTTY DX Contest	

Anyone who has been entering the Remembrance Day Contest for any length of time will be well acquainted with its many and varied changes over the years. Initially, the contest was only open to VKs, and contacts were scored according to a "points table" This allocated between one and six points per QSO, depending on the distance between the call areas concerned, and relative activity. In 1971 the rules were amended to include ZL, and again in 1974 when P2 emerged from VK9.

1974 also saw an experiment in which different call areas within the same WIA division were precluded from working each other for the purpose of the contest, which excluded VK7 — VK0, VK2 — VK9/LH, VK4 — P2, VK6 — VK9/C/X, and VK5 — VK8. Not surprisingly, many people were quite upset about this, and the idea was quietly dropped the following year

The points per QSO continued to change from year to year, and in 1978 the minimum points on HF doubled from one to two. The intention was to improve the scoring ability of HF stations (given that on VHF one could work the same station, in the same state, every two hours) However, other entries in the table remained the same, which had the unfortunate effect of halving the relative value of higher scoring HF QSOs. In retrospect, it would probably have been better to double all the entries in the table; however, this is easy to say in hindsight In any event, the table only survived a couple more years and, in 1981, was replaced by fixed points per QSO, which has lasted to this day.

It is evident that, throughout this period, the contest organisers were putting a lot of effort into optimising the table in order to make it equally fair to everyone. However, whereas one would have hoped to see the table spiral in towards a final solution, by the end of the decade it was just as volatile as it had been ten years earlier. A graph of the points per QSO between representative Divisions, plotted from 1970 to 1980, illustrates this vividly.

Coinciding with these scoring changes, various formulas were also tried to determine the winning Division. Despite their differences, they shared a reliance on weighting factors, moving averages, linear regressions, and other complex techniques. The intention was to try and identify the different scoring abilities of the various call areas, and encapsulate them in a set of weighting factors, to bring the Divisions to a perfectly level playing field.

Now, any statistician will tell you that this is a realistic enough goal, providing you feed huge numbers of QSOs, extracted from many years of RD logs, into a set of complex formulas, and then repeat the process each year thereafter Despite requests for such a person to step forward, no-one did, which is not surprising considering the huge amount of work involved. Consequently, for the past two to three decades we have been stuck with formulas which, although well intentioned, have not been up to what is really quite a complex task.

By the 90s, the contest was getting into serious difficulty, due to steadily declining support. This decline had in fact been noticed as far back as 1986, in an excellent article by the late Ron Henderson VK1RH in *Amateur Radio*, August 1986. In that article he showed that the average number of contacts per log peaked in 1982, following which it fell each successive year after that. It is interesting to speculate whether the fall in support was related to the introduction of fixed points per QSO in 1981, or was mere coincidence. This aspect will be looked at more closely in the near future.

Over the past year many letters regarding the contest have been received, two of the most cogent being those from Bruce VK3JWZ and Vince P20VH. Extracts appeared in the March column, but both basically said that *"many people now refuse to operate HF, as they can keep all QSO points within their state by operating VHF only. Something must be done to bring operators back to HF..."*

I am pleased to say that their comments, and those of many other entrants, sparked a great deal of investigation into the overall objectives of the contest, its rules, and discussions about how it might be improved. Some suggestions have already been implemented for this year's contest, for example double points on CW, and others are under serious consideration for the future.

Two things are certain. Firstly, we **do** take notice of your letters, and secondly, there is no way we will let the RD Contest languish. The rules of the new, refurbished RD Contest appear below, and I would like to thank Alek VK6APK for a superb effort in preparing them. If you haven't been entering the RD lately, I strongly recommend you enter it this year, because it shows all the signs of being a roaring success. Not only will you have a lot of fun, but you will be helping your Division as well. Enter, and enjoy!

Addendum to results of 1994 RD Contest

In the results published in February 1995 issue of *Amateur Radio*, please delete VK3GHZ (66 points) from the VK3 HF Phone results, and add VK2GHZ (66 points) to the VK2 HF Phone results. Apologies to VK2GHZ

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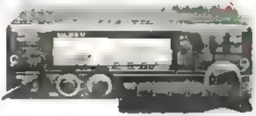

2 Year Warranty

Cat D 3630

Specifications

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Frequency range:	Transmit 144-148 MHz Receive 140-174MHz	Intermediate Freq:	21.4MHz & 455kHz
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Current Consumption	Receive: 400mA Transmit: 12 Amp (Hi power)	Maximum AF Output	2.0 watts into 8 ohms @ 10% THD
		Transmitter	
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Dimensions:	180 x 50 x 180mm (w/o knobs)		

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The outstanding FT-890 is a rugged 100 watt PEP mobile transceiver that covers all HF amateur bands in SSB, CW, FM and AM modes, plus provides continuous reception from 100kHz to 30MHz. Two direct digital synthesisers (DDSs) provide pure local signals and fast changeover, while the low noise receiver front-end offers excellent receiver dynamic range performance. The switchable RF amplifier and a 12dB attenuator provide clear copy of even extremely strong signals, [illegible] activated by both IF Shift and IF Notch filters. Two independent VFOs per band are provided, plus 32 memories which store data from both VFOs. There's also an effective variable noise blanker and a CW iambic memory keyer, plus an adjustable passband shifting speech processor which lets you tailor SSB transmitted audio to your own voice and microphone characteristics. The FT-890 weighs less than 6kg, uses modular design and surface-mount components to ensure highly reliable operation and comes complete with an MH-1 hand mic. An optional internal automatic Antenna Tuner (ATU-2) is also available, which can be controlled from the front panel.

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Many thanks this month to VK8APK, *CQ, QST,* and *Radio Communications*. Until next month, good contesting!

73,
Peter VK3APN

SEANET DX Contest

CW Jul 22/23, 0000z Sat — 2400z Sun
SSB Aug 19/20, 0000z Sat — 2400z Sun

This annual event is sponsored by the Radio Society of Thailand. The objective is to promote contacts between amateurs worldwide and stations in the "SEANET" area on 160-10 m (this area includes Southeast Asia, neighbouring oceanic countries, VK and ZL). Categories are single operator, single and all bands, and multioperator single transmitter all bands. Exchange RS(T) plus serial number starting at 001 on each band. Multipliers are SEANET country prefixes A4, A5, A6, A7, A9, AP, BV, BY/BZ, DU/DV/DX, EP, HL, HS, JA, JD1, JY, KH2, P2, S7, VK1-9, VQ9, VS6, VU, V8, XU, XV, XW, XX, YB/YC/YE, ZK, ZL/ZM1-4, ZL/ZM6, ZL/ZM8, 3B6/3B7, 3B8, 3B9, 4S, 4X/4Z, 8Q, 9K, 9M2, 9M6/9M8, 9N1, 9V.

Scoring is complicated! For QSOs with stations outside the SEANET area, SEANET stations should score 10 points for each QSO on 160 m, five points on 80/40 m, and two points on 20/15/10 m. For SEANET to SEANET QSOs, count six, three and one points respectively. Exception: **double** points apply for QSOs with DU/DV/DX, HS, YB/YC/YE, 9M2/6/8, 9V, V8. Contacts with stations in one's own country are not permitted for contest credit. The multiplier equals the number of SEANET countries worked times two, **plus** the number of non-SEANET countries worked (ie DXCC) times three. The final score equals the total points times the total multiplier.

Although VK is a large country within the contest jurisdiction, the organisers continue to overlook that fact when deciding who to send rules to. Consequently, the mailing information is a couple of years old. If you enter, try sending your log to the last known manager, "Eshee Razak 9M2FK, Box 13, 10700 Penang, Malaysia". Include three IRCs for results. Logs must be received by 31 October (without current rules, there is no guarantee of future publicity through this column!).

Worked All Europe DX Contest

August 12/13 (CW), September 9/10 (SSB), November 11/12 (RTTY), 0000z Sat — 2400z Sun

The object is to work European stations (except in the RTTY section, where anyone works anyone). Bands are 80-10 m. In the contest, avoid 3550-3800 and 14075-14350 on CW, and 3650-3700 and 14300-14350 on SSB. The minimum time of operation on a band is 15 minutes, although bands may be changed within this period if, and only if, the station worked is a new multiplier. Categories are single operator all bands, multioperator single or multi-transmitter (transmitters must be within 500 m dia area), and SWL all bands. DX cluster support is allowed. A maximum of 30 hours is allowed for single operator stations, with up to three rest periods (mark them in the log).

Exchange RS(T) plus serial number. Additional points can be gained using QTCs, as follows. After working a number of European stations, details of those QSOs (ie QTCs) can be reported during a current QSO with another European station. In the CW and phone sections, QTCs are sent from non-European stations to European stations. In the RTTY section, QTCs can be sent to any station outside one's own WAC continent. A QTC contains the time, callsign, and QSO number of the station being reported, eg: "1307/DA1AA/431" means you worked DA1AA at 1307z and received serial number 431. Commence QTC traffic by sending the QTC series and number of QSOs to be reported, eg "QTC 3/7" indicates this is the third series and that seven QTCs will be sent. A QSO may be reported only once, and not back to the originating station. A maximum of ten QTCs can be sent to the one station, who can be worked more than once to complete the quota. Only the original QSO, however, will have points value.

The multiplier is determined from the number of European countries worked on each band (or on RTTY only, the number of DXCC/WAE countries). On 80 m the number of countries is multiplied by four, on 40 m by three, and on 20/15/10 m by two. The total multiplier is the sum of the individual band multipliers. Final score = (QSOs + QTCs) x multiplier.

SWLs log each station only once per band. Logs must contain both callsigns and at least one of the control numbers. Count one point for each station logged, and one point for each complete QTC received (max ten per station).

Use standard log and summary sheet format. Include a checklist for more than 100 QSOs on any band, and if more than 100 QTCs have been sent, include another checklist to show that the quota of ten QTCs per station is not exceeded. Logs can be submitted in ASCII on a DOS disk, providing a paper summary sheet is included. Send logs to: WAEDC Contest Committee, Box 1126, D-74370 Sersheim, Federal Republic of Germany. Deadlines are 15 Sept (CW), 15 Oct (SSB), 15 Dec (RTTY).

European countries are: C3 CT CU DL EA EA6 EI EM/N/O ER ES EU/W F G GD GI GJ GM GM (Shetland) GU GW HA HB HB0 HV I IS IT JW (Bear) JW (Spitzbergen) JX LA LX LY LZ OE OH OH0 OJ0 OK/L OM ON OY OZ PA RA1-RZ6 S5 SM SP SV SV5 SV9 SY T7 TA1 TF TK UA1-UI6 UR1-UZ6 YL YO YU ZA ZB2 1A0 3A 4K 4N 4U (Geneva) 4U (Vienna) 9A 9H

16th Keyman's Club of Japan CW

Aug 19/20, 1200z Sat — 1200z Sun

This contest is designed for CW enthusiasts, and will particularly suit those who are collecting Japanese prefectures for awards. An interesting variation is the inclusion of 6 m. The only category is single operator multiband. Suggested frequencies are 3510-3525, 7010-7030, 14050-14090, 21050-21090, 28050-28090, and 50050-50090. Exchange RST plus continent code (OC), JAs will send RST plus district code. Score one point per QSO. The multiplier on each band is the total number of JA districts (max 60). Final score equals total points x total multiplier. Show duplicate QSOs with zero points, attach a summary sheet showing all usual information, and send the log to: "Yasuo Taneda JA1DD, 3-9-2-102 Gyodacho, Funabashi, Chiba 273, Japan", to be received by 29 September 1995. ASCII logs on a DOS disk are most welcome.

Results of 1993 ARRL 10 m Contest

(Call/Score/QSOs/M.Jt/Hrs/Class/Pwr
Class: A = Mixed, B = Phone, C = CW, D = Multiop;
Pwr: A = 5 W max, B = 150 W max, C = over 150 W;
* = award winner

VK2APK*	93024	337	72	36	A	B
VK8BE	1976	35	19	36	A	B
VK4NEF*	2600	65	20	36	B	A
VK2ARJ*	5400	108	25	36	B	B
VK2GAH	1024	32	16	36	B	B
VK4LW	1760	80	11	36	B	C
VK4XA*	93600	390	60	21	C	B
VK2VM	22196	179	31	9	C	B
VK4ICU	2304	72	8	36	C	B
VK3EFO	1548	43	9	36	C	B
VK2QF*	69688	281	62	36	C	C
VK4TT	54180	301	45	36	C	C
VK1DX*	114800	646	82	36	D	—

1995 RD Contest: VP Day 50th Anniversary

Presented by Alek, VK8APK

Introduction

Marking the 50th Anniversary of the end of World War II, this year's contest sees substantial changes to the scoring system and method of determining the winning division. These changes are considered necessary to ensure a future for what must still be regarded as the best contest in Australia today.

It is hoped that they will also enable a wider understanding of how the winning Division is determined. There are changes to the points scored per QSO, which are designed to promote greater activity in the CW mode, and also on the 160 m band. The new points system will be implemented for this year's contest.

We will see an end to the present over-complicated method of determining the winning Division which, with its participation factors, weighting factors and moving averages, has been very difficult for most entrants to understand. The deciding factor, however, was the realisation that the present formula favours those Divisions where most activity is on VHF, which has led to a considerable reduction in HF activity. This is contrary to the original aim of the contest, which was to promote *interstate* contacts and encourage participation from *all* Australian amateurs, regardless of whether they operate on HF or VHF.

Starting this year, a much simpler formula will be used, which pits Divisions *against themselves rather than each other*. For each Division, its total score for the current year will be divided by its total score for the previous year, calculated separately for HF and VHF. The HF and VHF factors will then be averaged, to give an overall "improvement factor" for that Division. The Division with the highest improvement

factor will be declared the winner. From now on, Divisions will have to pay equal attention to both HF and VHF, in order to do well.

A benefit of the new formula is that by calculating separate improvement factors for HF and VHF, the relative scoring differences between HF and VHF become irrelevant. This equalises the playing field for all Divisions, regardless of their number of licensees, relative HF and VHF activity, geography, and propagation on the day. In addition, this change makes it possible to independently fine-tune the HF and VHF scoring systems, should it ever be necessary, without introducing scoring imbalances.

The only other change to the scoring system is that SWL logs will not be used in determining the scores for any Division.

An open section has been introduced for entrants who wish to use both phone and CW. It is hoped that this change will encourage more phone entrants to use CW and vice-versa, thus increasing the amount of activity on both modes. Entrants will no longer be stuck with one mode for the duration of the contest, but will be able to try the alternative mode during the contest, and enter the open section if they find they do well. A side effect of this change is that entrants may now only submit one HF log, plus one VHF log.

For the first time, entrants who operate from outside their own call area will be able to elect to have their points credited to their home Division, simply by indicating their wishes clearly with their logs. It is hoped that this change will encourage more activity from entrants outside their home state, and perhaps even some DXpeditions to the various islands outside the mainland.

The practice of sending just the summary sheets has not resulted in the increase of submissions which had been hoped for, and has made it impossible to gather important statistical information from the logs. Therefore, this year sees a return to the requirement for sending complete and legible logs and summary sheets, as is the practice for every other contest in the world today.

Peter VK3APN is to be thanked for his efforts to inject new life into this contest (*thanks Alek — Peter*), and it is to be hoped that the enhancements will encourage greater activity and enjoyment for all who participate.

CONTEST DETAILS

Purpose: This contest commemorates the amateurs who died during WWII and is designed to encourage friendly participation and help improve the operating skills of participants. It is held annually on the weekend where the Saturday is closest to 15 August, the date when hostilities ceased in the south-west Pacific area.

It is preceded by a short opening address by a notable personality, transmitted on various WIA frequencies during the 15 minutes immediately before the contest. During this ceremony, a roll call of those amateurs who paid the Supreme Sacrifice is read.

A perpetual trophy is awarded annually to the WIA Division with the best performance. It is inscribed with the names of those Australian amateurs who made the Supreme Sacrifice, to perpetuate their memory through amateur radio in Australia.

The name of the winning Division each year is also inscribed on the trophy, which is presented at the Annual Federal Convention. The winning division holds the trophy for the following 12 months, and receives a certificate. The leading entrants will also receive certificates.

Objective: Amateurs in each VK call area will endeavour to contact other amateurs in other VK call areas, P2 and ZL, on 1.8-30 MHz (10, 18 and 24 MHz excluded). On 50 Hz and above, amateurs may also contact other amateurs in their own call area.

Contest Period: 0800 UTC Saturday 12 August to 0759 UTC Sunday, 13 August 1995. As a mark of respect, stations are requested to observe 15 minutes silence prior to the start of the contest, during which the opening ceremony will be broadcasted.

Rules:

1. The contest categories are:
   (a) High Frequency (HF) — for operation on bands below 50 MHz.
   (b) Very High Frequency (VHF) — for operation on the 50 MHz band and above.
2. Within each category the applicable sections are:
   (a) Transmitting Phone (AM, FM, SSB, TV);
   (b) Transmitting CW (CW, RTTY, AMTOR, PACTOR, packet, etc),
   (c) Transmitting Open (a) and (b),
   (d) Receiving (a), (b) or (c).
3. All amateurs in Australia, Papua New Guinea and New Zealand may enter the contest, whether their stations are fixed, portable or mobile.
4. Cross mode and cross band contacts are not permitted.
5. Call "CQ RD", "CQ CONTEST", or "CQ TEST". In addition to honouring those who lost their lives in World War II, for this year only entrants have the option of using "CQ RD 50", specifically to commemorate the post-war resumption of amateur activity.
6. Stations may be contacted once on each band using each mode, ie up to twice per band using Phone and CW.
7. On the 50 MHz band and above, the same station in any call area may be worked using any of the modes listed at intervals of not less than two hours since the previous contact on that [redacted].
8. Multi-operator stations are not permitted (except as in Rule 9), although log keepers are allowed. Only the licensed operator may make a contact under his or her own callsign. Should two or more operators wish to operate a particular station, each will be considered as a separate contestant and must submit a log under their own individual callsign.
9. Club stations may be operated by more than one operator, but only one operator may operate at any time ie no multi-transmission.
10. For a contact to be valid, numbers must be exchanged between the stations making the contact. The number will comprise RS (for phone) or RST (for CW), followed by three figures commencing at 001 for the first contact, and incrementing by one for each successive contact.
11. Contacts via repeater (including satellite) are not permitted for scoring purposes. Contacts may be arranged through a repeater. The practice of operating on repeater frequencies in simplex is not permitted.
12. On all bands except 160 m, score one point per completed valid contact, and on 160 m, score two points per completed valid contact. On CW, score double points.
13. Logs should be in the format shown below, and accompanied by a summary sheet showing the following information:
    Callsign. Name. Address.
    Category (HF or VHF).
    Section (Phone, CW, Open, or Receiving).
    Total score.
    Declaration "I hereby certify that I have operated in accordance with the rules and spirit of the contest."
    Signed: Date
14. Entrants may submit one HF log, and one VHF log. Separate logs and summary sheets are preferred.
15. Entrants temporarily operating outside their allocated call area, who wish to have their points to be credited to their home division should make a statement to that effect on their summary sheet/s.
16. Forward the log/s and summary sheet to "RD Contest Coordinator, A Petkovic VK6APK, 26 Freeman Way, Marmion, WA 6020". Endorse the envelope "Remembrance Day Contest" on the front outside. Entries *must* be forwarded in time to reach the Contest Coordinator by Friday, 15 September 1995.
17. Certificates will be awarded to the leading entrants in each section, in each VK call area, P2, and ZL. Entrants must make at least ten contacts to be eligible for awards, unless otherwise decided by the Contest Coordinator.
18. Any station observed as departing from the general y accepted codes of operat ng ethics may be disqualified.

Determination of Winning Division: Scores of VK0 stations will be credited to VK7. Scores of VK9 stations will be credited to the mainland VK call area which is geographically closest. Scores of P2, ZL, and SWL stations will not be included in these calculations. Entrants temporarily outside their allocated call area may elect to have their score credited to their home Division. If no such election is made, their score will be credited to the Division represent ng the call area in which they operated during the contest, as def ned herein.

For each Division, an "improvement factor" will be calculated as fo lows:

(a) For transmitting logs only, the Division s total HF points will be divided by its total HF points for the previous year.
(b) The same will be done for VHF.
(c) The average of (a) and (b) will be the improvement factor for that Division.

The Division with the highest improvement factor will be declared the winning Division.

Receiving Section Rules

1. This section is open to all SWLs in Australia, Papua New Gu nea, and New Zealand. No active transmitting station may enter this section.
2. Rules are the same as for the Transmitting Section, as applicable.
3. Only completed contacts may be logged, ie it is not permissible to log a station calling CQ. The details shown in the example must be recorded.
4. The log should be in the format shown below.

Example Summary Sheet

Remembrance Day Contest 1995
Callsign: VK1XXX
Name: Joe Brown
Address: PO Box 123, Farm Orchard, ACT 2611
Category: HF
Section: Transmitting phone
Total Score: 505
Declaration: I hereby certify that I have operated in accordance with the rules and spirit of the contest
Signed: J. Brown Date: 20/8/95

Example Transmitting Log

Remembrance Day Contest 1995
Callsign: VK1XXX
Category: HF
Section: Transmitting phone

Date Time (UTC)	Band (MHz)	Mode	Call	No. Sent	No Rcvd	Pts
0800	14	SSB	VK2QQ	58001	59002	1
0802	14	SSB	VK6LL	59002	59001	1
0805	14	SSB	VK5ANW	59003	58011	1
0807	14	SSB	ZL2AGO	57004	57003	1
0809	14	SSB	VK4XX	59005	59007	1

Example Receiving Log

Remembrance Day Contest 1995
Name/SWL No: L30371
Category: HF
Section: Receiving phone

Date Time (UTC)	Band (MHz)	Mode	Calling	Called	No Sent	No. Rcvd	Pts
0800	14	SSB	VK1XXX	VK2QQ	59001	59002	1
0802	14	SSB	VK1XXX	VK6LL	57002	57001	1
0805	14	SSB	VK5ANW	VK1XXX	59011	59003	1
0807	14	SSB	ZL2AGO	VK1XXX	58003	59004	1
0809	14	SSB	VK7AL	VK2PS	59007	58010	1

PO Box 2175, Caulfield Junction, VIC 3175

Divisional Notes

Forward Bias — VK1 Divisional Notes

Peter Parker VK1PK

New Broadcast Officer Appointed

Your scribe has been appointed the new VK1 Broadcast Officer following the resignation of Peter Westerhof VK1NPW in May. Peter, who had been involved with the broadcast for approximately eighteen months, has decided to devote more time to his career and family. The Division thanks Peter for his efforts, and wishes him well in his endeavours. His unique broadcasting style will be missed. Fortunately, we have not lost Peter altogether as he remains a Divisional Councillor.

Richard VK1RJ (our Federal Councillor) continues to keep us informed via the broadcast on the progress of the new regulations. Because things are still uncertain as I write this column, I have not attempted to cover these matters in *Forward Bias* and, instead, refer you to other parts of this magazine and the VK1WI broadcast for the latest information.

The broadcast is transmitted each Wednesday at 8 pm local time. Canberra residents can tune to 146.900 MHz, and those further afield can listen on 3.570 MHz for the relay by John VK2EJC. It is good to see that more people are contributing to the broadcast, so that VK1WI can continue to provide a comprehensive news service to the Canberra region and beyond.

Disposals Segment Returns

One of the most popular features of the VK1WI broadcast has been its disposals segment. This service had been provided by Gavan VK1EB and, later Peter VK1NPW, but for a brief time we had no disposals officer at all. It is thus, with great pleasure, I report that Tex VK1TX has volunteered for the position.

If you have radio gear you wish to sell, or are looking for equipment to buy, phone Tex on 296 2508. Please ring between 5 and 9.30 pm only.

Division Celebrates ITU Day

The VK1 Division commemorated ITU Day (May 17th) by holding a special two metre scramble after the VK1WI broadcast. The contest, which lasted for just five minutes, was a surprise to VK1WI listeners as no prior notice was given. The event was a great success, and participation was good, with at least ten stations exchanging numbers. Maybe the good turnout was because people had no time to find excuses not to enter! Eight participants provided their score on a callback held after the scramble. Competition was very tight, and the winning score was shared by four entrants, Clint VK1CX, Richard VK1SW, Tex VK1TX and Bernie VK1ZBG with seven points each. Then followed Scott VK1PWE with six points, Richard VK1RJ five points, Graham VK1MGT two points and John VK1ZAO one point.

The Divisional callsign, VK1WI, was also active, and made six contacts. Stations working it received a one point bonus. The popularity of this event makes it likely that further scrambles will be held by the Division. VK1WI will keep you informed as to when these might occur.

ACT BBS Gets New Sysop

The VK1BBS packet bulletin board system now has a new sysop. He is John VK1ZAO. John replaces Gavan VK1EB, who previously performed this important task. All packet users thank Gavan for his efforts, and welcome John, who previously lived in Alice Springs. At the time of writing, the BBS operates under the VK1ZAO callsign, but it will have reverted to VK1BBS by the time you read this.

John's BBS operates 1200 baud on 147.575 MHz, and 4800 baud on 144.800 MHz. Both J-NOS and FBB software are supported by the BBS. VK1ZAO is situated in the Belconnen area, and can be reached from Yass. Packet operators in the South could try the ACT's other BBS, VK1KCM, located in the Tuggeranong locality. Those of us who live in the middle, and can't access either direct, could digipeat through stations such as VK1GN (Narrabundah) or VK1ZX (Rivett).

Sailors Sold

All of the Division's Sailors transmitters have been sold. These transceivers were purchased as surplus equipment by the Division some time ago, and were eagerly snapped up by members. The sale raised $2500 for the Division. The May general meeting thanked Peter VK1NPW and Len VK1NLJ (our hard-working secretary), for their efforts.

Repeater News

Much work is being done in this area, and the Ginini Repeater Replacement Fund now stands at $575. Donors will be acknowledged through this column. Special thanks to the West Australian Repeater Group for their donation, after hearing of our loss.

Contributions are welcome, and can be sent to Ginini Repeater Replacement Committee, C/- WIA ACT Division, GPO Box 600, Canberra, 2601.

VK1WI/Forward Bias Now on Packet

Thanks to the assistance of Richard VK1RJ, Peter VK1NPW and Leon VK2DOB, your Broadcast Officer is now on packet. This makes it easier than ever before to submit items for publication or broadcast. Items can be sent to VK1PK@VK1KCM. Concurrent with this change has been the posting of VK1WI Broadcast headlines on packet as a general bulletin.

VK2 Notes

Richard Murnane VK2SKY

A Fresh Start

By the time you read this, all the excitement and flurry of the Annual General Meeting and Council elections will be over, and the new Divisional Council can get on with the business of promoting the interests of Institute members.

Hopefully, the "packet racket" from the usual knockers will die down, and they'll find some other way to occupy the idle hours of their days.

A Bug in the Software?

"To err is human, but to really foul things up requires a computer" Most amateurs will be aware that the SMA is in the process of implementing its new RadCom computer system for handling radio licences. Several amateurs have reported on packet that the issuing of licence renewal notices (or "offers" as they call them now) has been delayed in some cases.

It is possible that some renewal notices have become lost altogether, so that if your licence was due for renewal in the last month or two, you might not have received yours. Be aware that the SMA **does not** send reminders, so you could lose your licence without knowing it! Please check your current licence and contact the SMA if your renewal notice is overdue.

Lowering Those Fees

As you may have heard on the Divisional broadcast, there is the possibility of negotiating a discounted licence fee for pensioners and veterans. This has been due to the efforts of Andy VK2KOX who has been lobbying his local member Well done, Andy! Those members who want to make sure that this reduction becomes a reality should contact Andy or the Divisional Office for details.

In the meantime, the Division is still seeking input from amateurs from all states for a submission, requested by the government, to justify a reduction in licence fees for **ALL** amateurs. Feedback has been coming in, albeit rather slowly so far. Special thanks go to Vince Roche VK8NVR on Bathurst Island, 50 km north of Darwin, who has provided us with a comprehensive list of incidents in which he has used amateur radio in recent years to preserve and protect human life, when telephone and even Outback Radio could not help.

On a more "mundane" note, my radio club (the Manly-Warringah Radio Society) recently provided communications for a local riding club's cross-country event. Three of the competitors fell and required ambulance treatment (one went to hospital, but nothing too serious, I gather).

The point is that there are many ways, both dramatic and ordinary, in which amateur radio proves its worth as a community benefit. Making our government representatives fully aware of the full extent of its worth, and of our value to the community as radio amateurs, can help us to raise the status of amateur radio in their eyes. The more they view amateur radio as a community resource, the less they'll view us as a cash cow.

Thought for the Month

This slight adaption of a line from the Alan Parker film, *The Commitments* is something each of us perhaps should do each day *"Say it loud — I'm an amateur, and I'm Proud!"*

VK3 Notes

Murray Lewis VK3EZM

Welcome to Newcomers

A very warm welcome is extended to the holders of Australia's first new amateur licence grade in two decades. The no-code Novice Limited Licence is now available. A few of the distinctive H-series suffix callsigns have already been heard on air and seen on packet. This new amateur operator class can use FM telephony and packet on portions of the 2 metre and 70 centimetre bands. Please give these new licensees any help and encouragement they need as they join our ranks.

Amateurs will also be aware that the old Combined class, a hybrid of the Novice licence and Limited licence, has been replaced. Those who pass the Limited licence theory, regulations, and Novice level 5 wpm Morse code, are now issued with the Intermediate class licence. This gives greater than Novice privileges on the Novice HF bands and, as its name indicates, is Intermediate between the Novice and AOCP full call.

Limited licensees have also been given FM telephony privileges on 29 MHz. All five classes of licence have benefited from the new regulations freeing the hobby from some previous restrictions and encouraging experimentation.

The '95-96 Council

The new WIA Victoria Council is confronted with considerable work for the next 12 months. The eight councillors are Jim Linton VK3PC (President), Barry Wilton VK3XV (Secretary), Rob Hailey VK3XLZ (Treasurer), Peter Mill VK3APO, Bill Trigg VK3JTW, George Hunt VK3ZNE, Rob Carmichael VK3DTR and Murray Lewis VK3EZM. In addition to duties as a councillor, most of the council members hold portfolios which keep them busy.

Repeater Licences

The increase by the Spectrum Management Agency in licence fees, effective from 1 April 1995, has an impact on our repeaters and beacons. WIA Victoria has an extensive network of repeaters, which has grown considerably in the past 15 years. Expansion of the repeater network has mainly resulted from two policies of the WIA Victoria Council. The first was in response to needs identified after the Ash Wednesday disaster in 1983. The Council also considered, in the mid-1980s, that WIA Victoria should support the then emerging use of packet radio. More recently, WIA Victoria licensed a number of new frequencies for possible future use by beacons. The substantial increase in licence fees has meant a necessary review of all the licences held by WIA Victoria.

Repeaters and beacons are licensed on an "assigned frequency" basis. The licence cost of many sites will rise. We have been checking our database of repeaters and beacons, and how to cut our licence fee expenditure. Changes will be made to achieve savings and minimise licence costs. Most of the review, and preparation of the 1996 budget item covering this major membership service, will be completed this month.

QSL Bureau

An upturn in propagation on the DX bands brought with it an increase in the number of QSL cards being sorted, distributed and despatched. A recent review of the WIA Victoria QSL Bureau has found it to be working extremely well, with Inwards and Outwards cards flowing efficiently. The system of QSL distribution points throughout Victoria, mostly WIA Victoria affiliated clubs, is getting the task done, and the Bureau is a membership service which receives considerable positive comment. Any member who wants to take advantage of the QSL Bureau service must first lodge a written application so that registration can be recorded on the database. Information sheets on the QSL Bureaux, including the card size and other requirements, are available on request.

RD Plaques Galore

Following our win in Remembrance Day Contest '94, the WIA Victoria office received not one, but two new winner's plaques. The plaques have now joined three others on the office wall. Why two plaques, you ask? Well, the issuing of plaques to the winning state is a relatively new practice, introduced in 1991. To recognise appropriately our fifth win in a row, WIA Victoria has obtained an additional plaque for our victory in 1990.

There are now renewed efforts by some amateurs to stop Team Victoria's winning streak, with more talk about changing the nature of the contest, or its rules, to keep us out of the running. Our fifth consecutive win equals the record of VK5, which won the Remembrance Day Contest from 1972 to 1976.

Team Victoria, with a little greater effort, will again be aiming for another win next month.

VK6 Notes

John R Morgan VK6NT

May General Meeting

Bruce VK6BMD was the volunteer speaker at the May GM, and he offered a user's perspective of the various amateur radio satellites. The description of the operating modes and frequencies of each machine was much as expected, but in recounting some of his more memorable contacts via satellite, Bruce both conveyed the camaraderie among satellite experimenters, and captured the audience's attention. As is often the case, the 45-minute limit was restrictive.

In answering a question from Will VK6UU, Bruce agreed that there was an urgent need for a dedicated satellite gateway station in Perth, to handle VK6's ever-increasing volume of international packet-radio traffic. The recent extremely poor conditions on HF, which have degraded the packet link between Perth and its nearest SatGate, which is in Adelaide, have reinforced this point.

In the General Business part of the meeting, the VK6 Federal Councillor (Bruce VK6OO) and the current Federal President (Neil VK6NE) took questions, many of which related to the Federal Convention which they had recently attended. A dynamic discussion rapidly evolved, and those members who departed at the coffee-break missed-out on a real treat!

One of the main points expressed by the members was their wish that they should receive much greater and more timely feedback from interstate gatherings, and especially after meetings between the Federal WIA and the senior management of the SMA. *(It should be noted that this request would seem to have been promptly acted upon, in that details of a meeting between the Federal WIA and the SMA, which took place two days later, were able to be reported at length (by Tony VK6TS on his VK6WIA News Broadcast) only 10 days after it occurred.)*

There was also general agreement on another point, that the Federal WIA should cease the seemingly-endless "tinkering" with its bureaucratic internal structure, and concentrate its energy upon the issues which the members (the "share-holders", as one member described us) consider to be important.

The VK6 Division meets on the third Tuesday of each month, at the Westrail Centre, East Perth, commencing at 8 pm. The bookshop and QSL bureau open at 7 pm. All interested persons (members and non-members, licensed or listener) are encouraged to attend. Free coffee and biscuits are available at "half time".

Repeater VK6RLK

Readers may remember the old Channel 10 repeater VK6RWC (147.100 MHz), which was only occasionally active over the past decade. The machine has recently been refurbished, and given a new callsign. It is now permanently on-air from a fixed site near "The Lakes", which is about 50 km east of Perth.

VK6BBS Packet BBS

The equipment of this system was recently sold to the Western Australian Repeater Group Inc (known as WARG) by its long-time owners Joe VK6ZTN and Laurie ex-VK6ZLD, both of whose interests have changed somewhat over recent years. The sale surprised many users, who had thought the system was already owned by WARG or WAADCA, since it was located at the former's site, and was maintained by the latter's volunteers.

It is understood that Laurie wishes to retain the VK6BBS callsign, so the system will shortly have to change to a yet-to-be-decided callsign. All the equipment will, however, remain at the Roleystone site, where it is co-located with WARG's VK6RAP (146.700 MHz) and VK6RUF (438.525 MHz) voice repeaters, and WAADCA's VK6RAP (144.875 MHz and 439.050 MHz) ROSE-node digipeaters.

Club Secretaries

All material for inclusion in this column must arrive on or before the first day of the month preceding publication. **Items from country members and clubs will be especially welcomed.** Packet mail may be sent to VK6NT@VK6ZSE # PER.#WA AUS.OC, or write to PO Box 169, Kalamunda WA 6076, or telephone (09) 291-8275 any time.

"QK1M" — News from the Tasmanian Division

Robin L Harwood VK7RH

The June meeting of Divisional Council was held in Launceston on the 24th. At that meeting, valuable interchange between the various Branches and your Divisional Council took place over some outstanding issues on a local as well as a Divisional level. More about this in the August issue.

There have been developments as well as some hiccups regarding the packet-Internet gateway idea. The Southern Branch recently received some donations to assist their efforts to establish this in the Hobart area. Whilst the Launceston Institute of TAFE has been experimenting with this in the Launceston area, it still is only in the embryonic stage in both areas. Your Divisional Council wishes to see an orderly, smooth introduction to this and we do not wish to rush along headlong without sorting out the legal and technical parameters required. There has been an effort to "hurry along" the process by a few with the opposite effect to that intended by the proponents. As you are aware, there are a few legal questions being addressed at the highest levels about interconnections between Public connections and the packet network at present. Once this is resolved, this may clarify things and progress should be achieved.

VK7RTY, the Northern Branch Packet Digipeater, has been relocated to 7EX Hill, from Mount Barrow. Difficulties with access to where it was previously, could mean that it is a permanent fixture. This site is not favourable to forwarding to the Southern Packet network but, ideally, a

further site in the Midlands for a suitable digipeater should alleviate the problem. However, suitable sites and access are difficult in the short term. If a system such as the packet-Internet gateway was operational, this could overcome the necessity for a suitable Midlands digipeater At present, traffic has to be routed out via HF to a mainland BBS to be relayed south on another frequency and network Incidentally, there is a rather humorous acronym for the Packet-Internet Gateway System — PIGS!!!

In conclusion, just a few details with regard to two Divisional officers. Clarrie Hilder VK7HC was elected to be Divisional Awards Officer at the Annual General Meeting. His address is QTHR in the callbook and he recently presented a rather detailed submission with respect to both Special Event Stations and Awards. Council has asked him to continue with this, nominating one suitable event to be further investigated. Also at that AGM, I was delegated to investigate if a suitable candidate could be found to fill in. Unfortunately, I was unsuccessful in this endeavour and I will be continuing to be IARUMS Co-ordinator for this Division. Intruders seem to be rather light at present, fortunately, with long-term stations in Yogyakarta on 7098.7 kHz being transferred to the 90 metre band. The Radio Pakistan signal at 1200 on 7085 kHz is definitely a spurious transmission from 7310 kHz When the sender has been noted on other channels, similar spurious spots have also been noted nearby.

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FTAC Notes

*John Martin VK3KWA, Chairman, Federal Technical Advisory Committee**

New Licence Conditions

Details of our new licence conditions are given elsewhere in this issue Now that our new regulations have been gazetted, some of the band plan changes approved by Federal Council can now take full effect.

10 Metre Band

Limited licensees can now operate above 29 MHz but with modes limited to voice FM only. The international FM simplex calling frequency is 29.6 MHz, and the band plan now includes a new segment for domestic FM operation which provides nine channels at 20 kHz spacing from 29.12 to 29.28 MHz. FM operation on 29.30 MHz or below 29.52 MHz would overlap the satellite band and could interfere with satellite downlinks.

The recommended domestic FM calling frequency is 29 20 MHz. Another frequency of interest is 29.12 MHz, which is now in use by VK2WI for its Sunday broadcasts

Limited licensees do not have access to the 28.885 MHz VHF liaison frequency, but a channel in the FM segment could be useful I would suggest 29.18 MHz. Any comments would be appreciated. The new SMA licence conditions for repeaters have not been finalised at the time of writing, but it is understood that repeater linking will still be permitted only above 52 MHz. Use of simplex gateways for interstate repeater linking on 10 metres will continue to be illegal

Packet Radio Channels

The SMA now permits Novices to use digital modes above 146 MHz and also in the expanded two metre packet radio segment from 144.700 to 145.200 MHz The 145.200 MHz channel has been reserved in the band plan for WICEN use.

On the 70 cm band, the simplex packet channels are now 434.050 to 434.250 inclusive, plus 439.050, 439.075, 439.200, 439 225 and 439.250 MHz. Three repeater pairs have been earmarked for regenerative packet repeaters, namely 439 500, 439.525 and 439 550 MHz.

Two Metre Packet Channels and SAREX

The Morse practice beacons were moved from 144 950 to 144.975 MHz so that 144.950 MHz could be kept clear for SAREX uplinks. These beacons are now due to move to 144.650 or 145.675 MHz so that 144.975 can become a packet channel

However, there is more SAREX activity planned and the list of uplink frequencies is now 144 910, 144.930, 144.950, 144.970 and 144 990 MHz.

It would be good to keep any clashes between SAREX and packet stations to a minimum. There are now plenty of packet channels above 145 MHz and I would suggest that both 144.950 and 144.975 MHz should be kept clear for SAREX use. I would also suggest that, for the time being at least, it would help if packet stations could avoid 144.900, 144.925 and 145.000 MHz as much as possible.

SSTV/FAX Frequencies

These modes are becoming very popular and the band plans now include the following recommended channels for them: 145.625, 433.775, 1294 775 and 2425.775 MHz.

RTTY Frequencies

Most RTTY operation is on 146.600 MHz but the band plans now include the following extra RTTY channels. 145.600, 433.750, 1294 750, 2425.750 MHz

WICEN Frequencies

The following frequencies for WICEN use have been added to the band plans:

Simplex — 53.150, 433.800, 438.800, 1294.800 and 2425.800 MHz; Portable Repeaters — 438.275 and 438.625 MHz (existing), 439.925 and 439.975 MHz (new).

A two metre simplex frequency for WICEN is still to be finalised. A frequency with Novice access is needed and it has been suggested that WICEN could share the use of 146.625 MHz. Any comments would be appreciated.

ARDF (Foxhunting) Frequencies

ARDF activity is becoming more popular but different frequencies are used in each state and there is a need for a nationwide set of frequencies. Since most ARDF activity uses FM, the logical choice for frequencies is in the FM segment of each band. After consultation with Wally Watkins VK4DO, the following national ARDF frequencies have been included in the band plans: 53.300, 145.300, 145.700, 438.850, 1294.950 and 2424.850 MHz The 145.700 MHz channel is suggested for use by homing beacons only.

Other Special Purpose Frequencies

Frequency pairs for linear translators have also been reserved on two metres and higher bands. The two metre frequencies are 144.625-144.675 and 145.225-145.275 MHz

A frequency of 145.575 MHz has also been reserved for use by information beacons, for example, digitally recorded information services. Further details next time

Availability of New Band Plans

All band plans have been revised to incorporate the changes approved by Federal Council and the new licence conditions announced by the SMA. Copies of the revised band plans will be available from WIA offices. The full details will, of course, be included in the next Call Book

The FTAC information paper "Guidelines for Unattended Transmitters" will also be circulated as soon as possible after the SMA releases our new beacon and repeater licence conditions

Satellite Bands

The latest IARU Region III Journal asks all national societies to publicise the satellite segments of each band and draw

attention to the need to avoid terrestrial operation in these bands. Of special interest at present is the 29.30-29.51 MHz satellite segment mentioned above.

On two metres, a reminder that the satellite band extends up to 146.000 MHz and any FM operation on this frequency would cause half of the station's occupied bandwidth to fall inside the satellite band. Novice stations operating as low as 146.000 MHz would also be breaching their licence conditions because half of their occupied bandwidth would be below their lower band limit of 146.000 MHz.

Data Base Update

The 1995-1996 Call Book will be in preparation soon and it is time to update the beacon and repeater listings. It would be much appreciated if beacon and repeater licensees could check the 1994-1995 Call Book listings and send details of any changes to me via the WIA Federal Office.

PO Box 2175, Caulfield Junction, VIC 3161

WIA News

US Amateurs Win Auto-control for HF Digital Operation

Effective from 1 July, United States radio amateurs are permitted automatically controlled HF RTTY and data operation on segments of the 80, 40, 30, 20, 17, 15, 12 and 10 metre bands, which was previously not available to them.

Automatic control of amateur digital stations on VHF and higher bands had been authorised by the FCC back in 1986. The new rules provide for unattended, automated forwarding of digital messages between stations on HF. Automatically controlled HF digital stations must occupy a bandwidth of 500 Hz or less. The FCC adopted provisions to minimise interference to other amateurs from automated HF digital stations.

The FCC responded to proposals filed by the American Radio Relay League (ARRL) and the American Digital Radio Society (ADRS). The ARRL's petition resulted from a study conducted by the league under FCC Special Temporary Authority. (Thanks to *The ARRL Letter*, 4 May, 1995).

How's DX

*Stephen Pall VK2PS**

"Rejoice, the end is near!" This sounds like a "hot gospellers" cry, but it is not.

As the bands continue to be riddled with poor propagation, the immediate question of the average DXer is, How much longer will it take, before there is any change for the better in band conditions?

Last year (see May 1994 *Amateur Radio*) the experts had a variety of opinions. Patrick McIntosh, space scientist at Boulder, USA thought that the minimum of solar cycle 22 would be in the last quarter of 1995. Peter Taylor, from the American Association of Variable Star Observers, had the opinion that the minimum might occur sometime during the first portion of 1996. Andre Koecklenbergh, from the Sunspot Index Data Centre in Belgium, gave four possible dates for the minimum, August 1994, April 1995, December 1995 or March 1996. Dr Richard Thompson, a scientist at IPS Radio and Space Services, indicated that the earliest solar minimum would be in April 1996. These predictions were made 14 months ago.

I contacted Dr Thompson again in May 1995 to seek his views on this subject. According to him, the solar flux and the corresponding sunspot numbers are still in gradual decline. There had already been a number of days when the solar flux had reached the critical number of 67. This did not mean that there were no sunspot numbers at all but, for practical purposes, that their number was not significant. For instance, the sunspot numbers were 20 on 26 May when the solar flux number was also 67.

The next twelve months will see a constant movement up and down of the solar flux number. The deterioration of the cycle will continue but rather slowly and we will have more frequent periods when the solar flux will be as low as 66.

Dr Thompson said that a useful guide for the beginning of a new solar cycle is the signs of the changing magnetic structures in certain regions of the Sun. These magnetic changes occur usually 12 to 18 months prior to commencement of a new cycle.

No such change in the magnetic structure of the sun has been observed yet. The last minimum of the previous cycle occurred in August 1986 when the smallest smoothed monthly sunspot number was 12. Dr Thompson thinks that we will reach the minimum of the cycle in mid to late 1996.

The rise of a new cycle is usually much quicker. The time to reach the maximum of the cycle in 1964 was four years, in 1976 3.4 years, and in 1986 only 2.8 years. If the pattern of recovery is repeated then, by the year 1999-2000, we will be enjoying again the maximum propagation of cycle 23.

In the meantime, the DX is still there. Openings are short, sometimes from the wrong direction or from both directions, and the propagation can be lost in a matter of few minutes. One has to "chase" the openings these days, and one has be on the right band at the right time, but the DX is still there.

Kermadec — ZL8/G4MFW

Barry ZS1FJ/G4MFW was active from Raoul Island (29° 15' S, 177° 55' W) in the Kermadec group of islands. Barry's venture basically was a scientific one, observing bird life and collecting data and photographs to produce a book about the "Birds of the Antarctic and Other Rare Islands." A number of scientists were with him on the island. This could explain why, after lengthy negotiations and approaching a number of NZ Government bodies, he was finally granted approval to land, stay and also operate an amateur radio station from the island. His activity had nothing to do with the Government Meteorological Team, which is usually in residence on the island.

Barry had some difficulty when landing. He reportedly lost some equipment in the sea and was heard to say that he had to scale a solid rock-wall to gain access to the island.

There were other difficulties. Propagation was not the best and only a limited number of Europeans were able to have a contact with him. However, North America and the Pacific had reasonable propagation. Barry also had accommodation problems with his station. I heard him saying to his USA QSO partner that he was working from the lavatory. This was the only free place and, if he wanted to go outside to turn his beam by the "Armstrong method", he had to move everything out of the way.

Barry's activity came as something of a surprise to a number of New Zealand radio amateurs, among them Ken ZL2HU and Ron ZL2TT who have been involved in protracted negotiations to get permission to operate from Kermadec this year. Cards to ZL8/G4MFW (direct route preferred) should be sent in the usual way, SAE and return postage, to KA1JC, Phyllis Davis, 5282 Boyle Terrace, Port Charlotte, FL 33981, USA.

North Korea — P5

Martti Laine OH2BH, the well known DXer who is now based in Hong Kong, issued the following press release via JA1BK and N7NG. *"Martti Laine OH2BH announced today (May 16) from Vladivostok Russia, that the first authorised amateur radio operation took place from North Korea on May 14. They signed P5/OH2AM. The Finnish business delegation, including OH2BC, OH2BH and OH0XX, experienced difficulties with Russian border guards while trying to enter North Korea (DPRK). The delegation was held for 26 hours awaiting clearance. During that time they activated R0/OH0XX from the border region. Once in the DPRK, they report, they were warmly hosted by government and Telecom officials. During their 17 hour stay they were part of a series of business activities and their on-air time was limited. Some 20 QSOs were made on two occasions (14 MHz SSB and 7 MHz CW). The group presented four Yaesu HF/VHF transceivers for training purposes, and for actual amateur radio activity which is now scheduled for later this year. The DPRK Telecom delegation will be participating in the first Beijing DX Convention this October. While there they will observe amateur radio in action at BY1PK and will meet with CRSA officials including IARU Liaison, Mr Chen Ping, BZ1HAM."*

The Finnish amateur group was part of an important Finnish business delegation, therefore amateur radio played only a minor secondary role. The first QSOs were made with DU9RG, JA1BK and OH3YI and contact was made later with OH2H, a demonstration station for the Democratic Peoples Republic of Korea (DPRK) diplomats in Helsinki, which station was operated by OH2BU (President of the Finnish National Society, SRAL), OH2KI and OH2BDP.

Readers with good memories might remember how amateur radio was introduced some years ago to Albania, culminating in the first official DXpedition with the callsign ZA1A in September 1991. Maybe history will repeat itself again.

Faure Island — VK6ISL

This was the tenth island activity around the Australian coastline undertaken by Malcolm VK6LC. According to him, this was a small one consisting of himself and his son Rhyon (see *Amateur Radio*, May 95). Rhyon, not being an amateur, was the general help, cook, and the provider of fresh fish for breakfast as well as being the runner, back and forth 300 metres up to the top of a sandhill to change the direction of the beam antenna by the "manual rotating method".

The four day activity (12 to 16 May) resulted in 1800 contacts working six continents, 96 DXCC countries and 72 island references. Approximately 1000 contacts were made with Europe, 500 with North America and 300 with the Asia-Oceania region.

Faure Island is located in Shark Bay, North Western Australia, approximately 1000 km north from the West Australian capital city of Perth. The island is 15 km from the mainland and is about 20 km long and five km wide.

The whole island is covered by a pastoral lease which has been owned by the Hault family since 1904. Dick Hault, the present owner, has two to three thousand merino sheep and numerous Angora goats on the island. His assistance in providing support and facilities was very much appreciated by Mal. Dick was thrilled when, with the assistance of Mal, he was able to talk directly to an Austrian amateur.

Malcolm has sent me a long list of prefixes worked on 20 metres showing many rare DX countries. His experience is contrary to the opinion of some ill-informed amateurs who say that, because "the sunspot numbers are low, propagation is poor, and therefore there is no DX". The DX is there alright, but you have to spend quite a lot of effort and time to catch it.

Tung Sha Dao — BV9P

Hot on the trail of the Chinese Scarborough Reef activity, there was some new development from Taiwan. Pratas Island, as it is known by its anglicised name, was active from 25 May to 5 June. An international group of amateurs, and a team of 13 Taiwanese operators led by Ken Chang BV2RA, a Senator in the ROC government, and Dr

Faure Island, VK6ISL, 20 m four element monoband Yagi on the hill.

Bolin Lin BV5AF, president of CTARL, were active on all bands and modes, SSB, CW and RTTY. The Chinese Taipei Amateur Radio League in its press release stated that *"The BV9P DXCC application has been pending for the past two years because of procedural difficulties within the ARRL but it now seems clear that all potential concerns have been removed"*. Only time will tell. In the meantime, send your card to the QSL manager, KU9C, Steven Wheatley, 12 Netherton Terrace, Morristown, NJ 07960 USA.

Future DX Activity

- Claus DK9FE will be active from Faroes Island as OY/DK9FE using mainly CW from 10 to 27 July. With a vertical antenna he will be active on all bands including WARC, 15 Hz above the lower band edge. QSL to his callbook address.
- Peter KC1QF and Andreas SV1BKN will operate from Mount Athos using the callsign SV0GV/3 from 6 to 9 July. They will operate on the 10, 15, 20, 40 and 80 metre bands on SSB and CW. This operation will feature a special split frequency on a per region basis. The QSOs will be computerised and, if you call out of turn (ie not from your allocated frequency region), you will receive no QSL card. The regional SSB listening frequencies, for VK/ZL, described as the "rest of the world" are 14135-14150, 21235-21250, 28500-28525, and ITU Region 3 7050-7075. The regional listening frequencies for CW are also described as "rest of the world", 7020-7035, 3520-3535, 14015-14030, 21015-21030 and 28015-28030. The transmitting frequencies will be CW, 3510, 7015, 14010, 21010 and 28010, and SSB, 7075 (USB), 14255, 21355 and 28555. To my knowledge this is the first time that such an "interesting and elaborate" split frequency system will be used by a DXpedition. I wish you luck.
- Ron AA4VK, Murray WA4DAN, Bob KW2P and Vance W51JU will be active from Saint Paul Island from 27 July to 2 August. They will operate on all bands, CW, SSB and RTTY. They will use their own callsigns with the suffix /CY9. QSL to WA4DAN.
- Alex PA3DZN is now active in the Republic of Zaire using the callsign 9Q2L. He was heard on 20 metres CW between 2100 and 2330 UTC. QSL to PA3DLM.
- Bear Island in the Svalbard group will be activated by JW2FL from the end of May, mainly on the 20 metre band.
- Ken (ex-VP9MN) is on a two year assignment in Guantanamo Bay with the callsign of KG4MN. He is active on all bands using CW and SSB, but mostly in the CW mode on the WARC bands. QSL to WB2YQH.
- Popof Island in Alaska will be activated from 12 to 15 July with the callsign W5BOS/KL0. QSL to home call.
- FR5HG was heard saying that he will be returning to Glorioso Island around August/September.
- Valy Y03YX is in Angola for the next six months. He is running low power into wire antennas and operates at the bottom of the CW sub-bands. His callsign will be D2YX or YO3YX/4U.
- Paul 5Z4FO moved to Uganda and hopes to be active as 5X1MW.

The original 1904 homestead, now a shearing shed on Faure Island.

Interesting QSOs and QSL Information

E = *East coast; W = West coast; M = the rest of Australia*

- HR1KAS — Kenny — 14226 — SSB — 1315 April (E). QSL to Kenneth A See Jr, Box 67, Tegucigalpa DC, Honduras.
- ZP6CW — Doug — 18073 — CW — 2201 — April (E). QSL to Douglas J Woolley, PO Box 73, Caacupe, Paraguay.
- V47XC — Jim — 14226 — SSB — 1153 — April (E). QSL to G0IXC, J H Martin, 27 Firs Cres, Harrogate, North Yorkshire, HG2 9HF, United Kingdom.
- V31BR — Buzz — 14226 — SSB — 1325 — May (E). QSL to N5FTR, William M Loeschman, 717 Milton, Angleton, TX 77515, USA.
- 6Y5DA — Don — 14226 — SSB — 1130 — May (E). QSL to VE4JK, Joseph Nudd Knowles, Box 365, Carman, Manitoba, ROG OJO, Canada.
- RX1OX/P/FJL — Slava — 14201 — SSB — 0812- April (E). QSL to DL6YET, Nikolai Pfanenstiel, Pfarrer Muller Str 10, D-48268 Greven-Reckenfeld, Germany.
- E050HZ — 14207 — SSB — 1313 — May (E) QSL to W3HNK, Joseph L Arcure Jr, POB 73, Edgemont, PA 19028, USA.
- 3W5FM — Nikolai — 14195 — SSB — 2354 — May (E). QSL to UA0FM, Nikolai, PO Box 49, 693006, Yuzhno-Sahalinsk, Russia (recommended to use registered mail).
- VI50NAVY — Eric — 3585 — SSB — 1111 — May (E). QSL to PO Box 2018, Kambah, ACT, 2902, Australia.
- 5Z4BP — Ben — 14164 — SSB — 0409 — May (E). QSL via the Bureau.
- US100ITU — 14245 — SSB — 1350 — May (E). QSL to F5MKD, Michel Jacob, 8 Rue du Chevreuil, F-67450, Mundolsheim, France.

From Here There and Everywhere

- The Radio Club of Venezuela started processing QSL requests for the July 1994 YW RCV DXpedition on 15 May.
- It was announced that the Peoples Republic of China will have their first DX Convention between 13 and 16 October 1995. A special amateur station, BT1DX, will be active during the convention.
- 4U9U and 4U9Q QSL cards are now

good for DXCC credit for Burundi and Zaire.

- For the time being, Graham's ZL4MV QSL cards for the Auckland/Campbell Islands operation, ZL9GD, are not acceptable for DXCC credit. It appears that Graham, who is not a DXer and is not familiar with the DXCC rules, was not on land at the time of operations. He was operating mostly from aboard the boat, or off the dock and using the power from the boat.
- The proposed DXpedition to Navassa Island, KP1, has been cancelled because of transportation problems.
- Bob AA1M reports that the QSL manager for JW0E is US5MV.
- According to Laci HA0HW, who is the QSL manager for XU95HA and XU7VK, Sanyi and his wife Judit, who work for the Hungarian Embassy in Phnom Penh, left Cambodia on 12 June.
- The decision of the DXCC to apply the minimum size to island operations went into effect on 20 April 1995. The petition for Scarborough Reef to be granted a new DXCC country status was in the hands of DXAC before that date. It will be interesting to see the result of the voting on a possible new DXCC country.
- The QSL address of XV7SW is Rolf Salme, Embassy of Sweden, Box 9, Hanoi, Vietnam.
- The new QSL route for Romeo Stepanenko's operations as YA0RR, IS1RR, IS0XV, 9D0RR, XY0RR, 3W3RR, US8R, UR0RR, US0RR, and E07RR is via Vladimir Stepanenko, US1RR, PO Box 28 Chernigrov Postamt, 250000, Ukraine.
- Chen BZ1HAM reports that there are 110 club stations in the Peoples Republic of China (BY) and 120 individual licences (BZ).
- Brendan McCartney G4DYO, who was the editor of the RSGB's *DX News Sheet* for over 10 years, has resigned from his position.
- A group of very active Paraguayan DXers (ZP5MAL, ZP6XR, ZP5AZL, ZP5KW, ZP6CC, ZP5MKW, ZP5VBA, ZP6SC and ZP6VS) banded together and formed their own QSL Bureau because of the problems involving the "Radio Club of Paraguay and the Post Office" They will continue to do so until the above mentioned "conflictive" situation is solved The address is Dr Juan F Duarte Burro ZP5MAL, PO Box 34, Asuncion, Paraguay, South America
- There will be a World Radiocommunication Conference (WRC-95) in Geneva from 23 October to 17 November 1995. As is usual at these conferences, revision of radio regulations, including the table of frequency allocations, will be discussed. One hopes that there will be no changes to the present status of the amateur radio service.
- HS50A is a special call in Thailand to celebrate the 50th anniversary of ascension to the throne by King Bhumibol Adulyadej HS1A.
- The latest news from Paul I1RBJ on Seborga is that, as from 17 May, all IP licences and temporary permits have been suspended. The first locally licensed station is T88A (ex IP1A) which operates from the Palace T8T is the call of the official station of the Principality Telecommunication Directorate. T8/I1A is also active for radio tests from different locations. Rumour has it that the ITU has allocated the prefix group of T8A-T8Z to Seborga.
- QSLs to the special stations UR100IYU and EO50IK should be sent to US7IGF, Shevchenko Slava, 343212, Donetsk Obl, Slavinsk-12, PO Box 11, Ukraine.
- DXCC administrator, Bill Kennamer K5FUV says that the last BS7H/Scarborough Reef activity was "land based". Prior to the activity the DXpeditioners checked with the DXCC desk for exact requirements for land based operation. These included having all support structures above the high tide line, and not increasing the size of the rock above the high tide line, etc. The DXpedition met all these requirements. The only question to be resolved is to decide to which DX country the reef belongs — China, or is it a new "DXCC country"?
- The activities on the Andaman Islands (VU7) of Marni VU2JPS are unfolding slowly. Marni, who is employed by All India Radio, has "mixed" equipment, which transmits AM and CW on 20 metres and SSB on 40 metres. I heard Sudhakar VU2AU coordinating a net operation for Marni VU2AU took a list on 14195 kHz in the SSB mode, and called each station on the list. The station used CW mode to call Marni on that frequency and Marni replied in CW VU2AU then verified the contact and took the next one on the list
- If you listen around 0700 UTC on 7072 kHz you can hear a marine "cruisers net" operating which covers the central Pacific The interesting part is that there are quite a number of American (US) callsigns heard with the additional suffix of /VK. Some new system of licensing?
- FT5XK was heard on 4 June on the 20 metre band QSL to F6KQD 6V1A was also active on the same day from Goree Island, AF-45 (IOTA). QSL to 6W6JX
- The RSGB Islands on the Air (IOTA) Contest will take place for 24 hours starting at 1200 UTC on Saturday, 29 July. Bands to be used will be 80, 40, 20, 15 and 10 metres and the modes, SSB and CW. Many a new country can be worked from these "Island" DXCC localities activated specially for this contest.

QSLs Received

CE0/JA7AYE (3M JA7ZF) — S79FT (3W DL7FT) — C56/DL7FT (3W DL7FT) 9M8BT (5W N5FTR) — 9Q5TT (7W ON5NT) — HP8ADU (6M HP8AQF).

Thankyou

Many thanks to my faithful helpers who supply me with information which makes this column possible Special thanks to VK2AOY, VK2KFU, VK3DP, VK4AAR, VK4BX, VK6LC, US7IGF, 9V1RH and the following publications *QRZ DX, The DX Bulletin, The DX News Sheet* and DX Enterprises *Go List-QSL Managers list.*

**PO Box 93, Dural NSW 2158*

Stolen Equipment

The following equipment has been reported stolen. If you have any information that may lead to the recovery of the equipment, please get in touch with the advised contact as soon as practicable.

Make: Kenwood
Model: TH215A
Serial Number: 8091054
Type: Hand held transceiver
Owner: J Charlton
Callsign: VK2TGA
Contact details: 360 Brush Road, Ourimbah NSW 2258

Packet World

Grant Willis VK5ZWI*

Introduction

Hello everyone. It has been some time since I have been able to contribute to the *Packet World* column. Things are settling down now and I hope to be able to return it to a monthly event. I have also prepared a series which will appear in the future on how the SA Packet Radio network is structured which should interest both users and BBS operators alike.

There are a couple of things I want to do this month. First of all, I have several outstanding questions that have been asked of the *Packet Doctor* that I thought I would answer. I also have an interesting bulletin originated by Dave VK2GDM, and to which I responded, which raised some interesting questions about the direction of packet radio.

I would also like to take this opportunity to welcome all the new Novices and Novice Limited class licensees to the world of packet radio. Thanks to the new Technical Licence Specifications issued by the SMA, these people can now experiment with the world of packet communications. I urge all BBS and Network Operators to give a hand to the newcomers. Remember, we all started out knowing nothing at one stage.

Packet Doctor: Some Answers

Packet Digipeating — A question was raised by an amateur in the Far North of SA, regarding digipeating and what was allowed? My current understanding of the regulations is that packet radio digipeating is allowed to be done by any packet radio station. You do not have to be licensed as a repeater to allow digipeating through your station. Packet radio is allowed in unattended mode, so it would seem feasible under the current regulations to install a simple packet repeater and licence it as a Limited Call. (The cost effectiveness of this would now be in doubt, however).

Adelaide Wormhole — Another question that was raised was, How do people access the Adelaide Internet wormhole? The particular question came from a Melbourne station who found that when VK3ERM dropped the "XXX" alias command for accessing Adelaide, that he could not work out how to maintain a link to the Adelaide wormhole. The current ways to access the VK5 network through the wormhole is to either connect to VK5__GW:VK5XXX-11 NET/ROM node (which should be visible from many parts of the Wormhole NET/ROM network), or you can telnet to bbs.vk5xxx.ampr.org (44.136.188.220). The faster of the two is likely to be telnet. If you have not come across the telnet command before, contact your local wormhole or TCP/IP operator and ask them to explain it. I do hope to present some more information on wormholes and navigating the network in future editions.

Using the Yapp Program — A correspondent in Sydney wrote asking some specific questions on, How to use the Yapp terminal program? This is one of the early terminal programs but still one of the better basic ones for its generation. His specific questions related to how to capture and print mail as well as prepare mail for transmission. When using Yapp, you can capture mail to disk using the "F4" command, which will prompt you for a file name to write to what is to be captured. Type a file name of your choice, and then hit the < Enter> key. From then on, anything that appears as text from the TNC will be written to disk. To stop writing to disk, use the "F3" command. Then, to display the received file, you can either obtain a copy of a program like "LISTCOM" which can be found from many sources (ask your friends, they probably have a copy) or you can use a DOS command like "type [filename.ext] | more" which will display the file a page at a time (provided you have a full copy of DOS). If you have a printer, you should be able to print the file using "copy [filename.ext] prn:".

To generate mail on disk before connecting and sending it, just use any DOS text based editor. Some popular ones are QEDIT, EDIT, QED, NE etc, etc. Write your message into a text file and then save it. Once saved, start up the Yapp program again, connect to your local BBS, send the relevant mail sending commands and addresses, enter the message subject at the prompt, and then use the "F5" command in Yapp to send the text file. This command will prompt for the file name you wish to send. Once the file name is entered, type < Enter> and the program will retrieve it from disk and send it to the TNC. At the end of the file, control will be returned to the keyboard (don't touch the keyboard before all of the file is sent or you will abort the transfer). To terminate the message, use the Ctrl-Z keys and the BBS should respond with a message indicating that the mail was received ok.

I hope these little tips are helpful. I have had several comments from people writing that they are not able to get help from their local clubs. I hope this is not widespread. Packet can be a bit bewildering to a newcomer and I would hope that the clubs in each area would be a good source of people to assist with problems.

Packet Radio Band Plans Ratified

After over 12 months of discussion, lobbying and consultation, the new packet radio segments in Australia have finally been ratified in the WIA band plans. A proposal was originally conceived in VK5, by the SA Technical Advisory Committee, to expand the packet radio allocations on 2 m and 70 cm to help cope with the huge explosion in interest in this mode of operation as well as provision for some of the newer packet technologies that are appearing. The proposal was put to FTAC and given national circulation through each state TAC. The proposal requested space for more high speed services, new types of service delivery systems and expanded space on both 2 m and 70 cm. The results are 2 m, 144.700-145.200 (excluding 144.950 for SAREX) Note 1. 147.550-147.600; 70 cm, 434.050-434.250 inclusive (gained 434.100-434.175), 439.050-439.075, 439.200-439.250, and 439.500-439.550 (regenerative high speed repeaters — 5 MHz offset).

The 2 m extension has a number of provisions. It firstly cannot be completed until the CW training beacons move to their new sub-bands around 145.650-145.675 and secondly, the segment 145.100-145.175 was set aside especially for high speed (up to 9600 baud) services. 145.200 is to become the national WICEN packet frequency.

All packet operators are asked to respect the band plans and operate within the agreed segments. The band plans are set up and promoted to help all modes live in harmony and to assist in the prevention of interference between modes like packet, FM Voice and SSB/CW.

Packet Radio Future

The following questions were put to the VKNET Bulletin network by VK2GDM earlier this year. They are valid questions, especially for the new breed of amateurs that may be enticed from the Internet and Telephone BBS world through the new Novice Limited licence grade.

1. I can get 14k4 and 28k8 on my phone BBS system, my modem cost $400, what has packet radio to offer for the same bucks?

Depending on the radios, 9600 baud is achievable within that sort of figure BUT

high speed HALF DUPLEX packet has the usual problem of turn-around time and hidden transmitters. Regenerative repeaters (discussed in earlier *Packet World* columns) solve hidden transmitters and are a good way to deliver access to this (but are expensive to build — they require the same types of RF hardware as voice repeaters). Mass access full duplex is not really practical (there is no way of providing DCD on the radio for more than one user at a time). Higher speeds than, say, 4800 baud also require certain types of radio, and speeds above 2400 baud are, until very recently (and with expensive radios), certainly not "PLUG AND PLAY". This aspect alone stifles a wider uptake.

2. I have access to hundreds of BBSs in Sydney with GIGABYTES of files on line and able to download five Mbytes plus per hour for the cost of a local call. Can we obtain the same files on packet radio ??

Within the scope of the amateur regulations you can! The speed is the problem and again go back to question 1. SPEED COSTS, and it costs more than on the phone world where you are not worried about multiple access with other users on the same twisted pair!

Mind you if, for example, 9600 baud became much more widely accepted, one would hope that the manufacturers would be able to drop their prices too.

3. Does packet radio have a "Classified Section" similar to Fido-net?

NO. This is forbidden by SMA REGULATION. If you don't like it, help lobby to change it! Some countries do allow limited "Amateur Classifieds" but not in Australia at this time.

4. Why is Australia predominantly 1200 whereas overseas they use 9600 plus?

This is not really accurate. The majority of packet overseas is also 1200 baud for the average user. Yes, there is a higher penetration of 9600 baud, and 19.2 kilobit using Kantronics D4-10 radios (expensive) as well as some 56 kilobit in the USA and 38.4 k in Europe (that I know of, there are bound to be others) BUT the average access speed for the MAJORITY is 1200 baud!

Why is this, you might ask? I suggest it might be because TNC manufacturers have, until recently, only produced 1200 baud TNCs. 9600 baud systems have only just started to appear in the last one to two years, ten years or more after packet started. I would also suggest that it is because the radio manufacturers have only just started providing data sockets on commercial radios in the last 12 months. The majority of packet users I have seen want plug and play. Only 10%, I guess, are prepared to get out the soldering iron, attack their radio and build a modem to run faster!

Another interesting sideline to high speed is that the data switching boxes (known to most as TNCs) do not like high speeds. They have, in many cases, not progressed past the humble 1970's processor, the Z80. Those that have (like the Gracillis P10, the TNC3 and TNC4 680x0/68302 based boxes, etc) are all very expensive. Plug in cards have become available that can run the data rates required, but then even the processing limits of the XTs that are useful for repeater sites can be easily reached with three or four high speed ports and software like NOS.

5. What has packet radio to offer me as a new user?

My answer to this question is:

a. An experimental playground for low speed computer networking. It may not transfer huge quantities of useful data, but if you ever wanted to learn about computer networking protocols, low speed is ideal because you can see each link step in real time and the protocol exchanges that occur.

b. A basic introduction for the radio amateur who is new to computing.

c. A vast horizon for people to develop plug and play high speed CHEAP packet radio facilities.

Conclusion

Next month I hope to present at least the start to a glossary of packet terminology that I hope will help the newcomers find their way around the packet bands.

C/o GPO Box 1234, Adelaide SA 5001
VK5ZWI @ VK5TTY#ADL.#SA.AUS.OC

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Over to You — Members' Opinions

All letters from members will be considered for publication, but should be less than 300 words. The WIA accepts no responsibility for opinions expressed by correspondents.

Novice Needs

Regarding a Novice column, I must say that I am not too sure what material suits a novice and I am even less clear on what defines a novice. Is a novice one who has a Novice licence or is there some line one can draw on his knowledge to define him as a novice?

Is novice material that which is below this line or is it material to raise him above the line? In reading the VK1BPT *Over to You* letter carefully (*Amateur Radio*, January 1995), I got the impression that he was actually after material which would help him pass his full amateur licence, a sort of answer column to typical exam questions, I guess.

From what I can recall of the old Novice Notes column, it was not of that form at all. More so, it was random information on practical problems which the less experienced experimenter (even the experienced experimenter) might encounter. Sometimes it was the best technical material in the particular *Amateur Radio* issue.

I used to read it — not as a novice. Good straight forward material on fundamentals is interesting for all of us. One's ability to solve advanced problems is only as good as one's knowledge of the fundamentals.

Lloyd Butler
18 Ottawa Avenue
Panorama SA 5041

Ex-RAAF, Ballarat

Staff, Instructors and Trainees who served at ANGRAS and later, Radio School, Ballarat (1945-1961) are cordially invited to a reunion to be held in that city from 18 to 25 March 1996.

The reunion will include welcome and farewell functions in addition to a main dinner function, sporting events, tours, etc. Suggestions for other activities which could be included in the agenda in the time available would be welcome.

Persons to contact are: NSW — Ron Usher, 18 Norton St, Evatt ACT 2617, tel 062 583 1159; Bill Aubrey, 214 Caringbah Road, Caringbah 2229, tel 02 524 8782; Ossie Maguire, 1/41 Orient St, Kingscliffe 2481, tel 066 741 638. QLD — Toby Paine, 10 Talasea St, Trinity Beach 4879, tel 070 556 589; Reg Maloney, 7 Sotel Ave, Cranbrook 4814, tel 077 231 580, Nev Olive, 51 Flinders St, Monto 4630, tel 071 661 273: SA — Kingsley Jamieson, 80 Park West, Col Light Gardens 5041, tel 08 277 1206; Margaret Heath, 15/14 Yorktown Road, Elizabeth East 5112; Neville Kirwan, 4 Wren Street, O'Halloran Hill 5158, tel 08 382 3329.

M L (Toby) Paine

(We publish this letter in the knowledge that many of those invited are radio amateurs. Ed)

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Pounding Brass

*Stephen P Smith VK2SPS**

This months issue of *Pounding Brass* will feature a number of miscellaneous subjects received over the last few months from overseas letters and publications relating to telegraphy in general.

From America comes the news that the company "Vibroplex", which started production early this century and is still producing fine quality keys, has been taken over by a new owner, S Felton "Mitch" Mitchell. Mitch WA4OSR has been a licensed amateur since the early 1960s and will continue to produce the large range of Vibroplex products with a hint of some new keys being introduced later in the year.

Also from America we learn that Harry A Turner W9YZE, the world hand key champion, became a silent key on 21 December 1994 at the ripe old age of 88. Harry gained this prestigious title on 9 November 1942 by sending 35 wpm for five minutes and then copying the recorded text back without a mistake. His record appears in the "Guinness Book of Records" (his record still stands unbroken).

Most old timers will be aware of the "McElroy Chart of Codes and Signals". This was produced in 1943 by the McElroy Manufacturing Corporation, maker of the "Mac Keys", which are highly sought after by collectors from around the world. The chart was printed in six colours with a linen backing and measured 25" wide by 38" long. If you are unfamiliar with this chart and would like more information, refer to page 24 in Dave Ingram's book entitled "Keys Keys Keys" where a drastically reduced copy of the original is shown.

I have been informed that J F Rilinger KC1MI has produced a coloured version of the chart measuring 9" by 14"; not as large as the original but it would make a handsome attraction to any shack wall.

The "McElroy Chart of Codes and Signals" can be obtained from the publishers of "Morsum Magnificat" in Britain for the sum of UK nine pounds and 35 pence via surface mail.

Further information can be obtained from G C Arnold Partners, 9 Wetherby Close, Broadstone, Dorset, B H 18 8 JB, England.

From Europe we have the high speed telegraphy championships which will take place in Hungary during October this year. The venue, I believe, will be Siofok and the event has been organised by the MRASZ Hungarian Radio Amateur Society. More information on rules, etc, will appear in a later issue. As far as I am aware no Australian amateur has ever entered this event.

I believe Morse would greatly benefit if we could organise and run an event similar to our European friends. Perhaps an Inter Divison Competition? If anyone has any thoughts on the subject, drop me a line. Like the old saying, "A river is started by one drop of water".

I have just recently received information from an overseas operator that, in October 1994, a new QRP club was formed, known as the "I QRP Club". Further information can be obtained from Franz Falanga I7FFE), PO Box 243, 70059 Trani CBA, Italy.

I recently received, from the WIA Publications Committee, a book entitled "The Story of the Key", by the late Louise Ramsey Moreau W3WRE, for review in *Pounding Brass*. I anticipate this review will appear in next month's issue.

Ms Louise Ramsay Moreau became a silent key only recently. Her large collection of keys (over 300) will be housed in the AWA Museum in New York. If you are interested, the address for the museum is Village Green, Rts 5 & 20, Bloomfield, New York. The opening hours are from 2 to 5 pm on Sundays from May 1 to October 31; also from 7 to 9 pm on Wednesdays from June 1 to August 31. The museum telephone number (716) 657 6260.

Coming issues: "The Story of the Key"; Preparing for and undertaking a Morse examination; NSW Morse Practice nets.

*PO Box 361, Mona Vale NSW 2103

QSLs from the WIA Collection

Ken Matchett VK3TL Honorary Curator WIA QSL Collection*

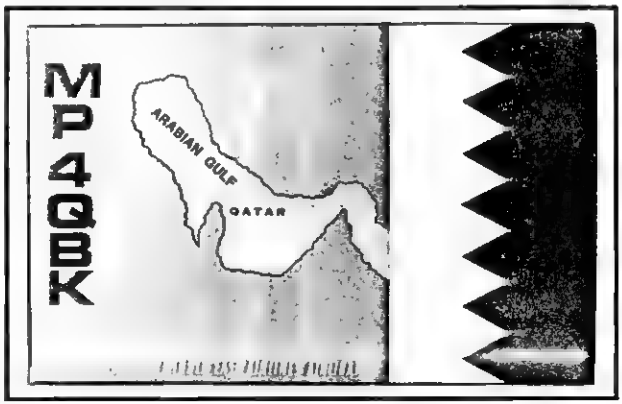
Qatar — Oil Rich Emirate

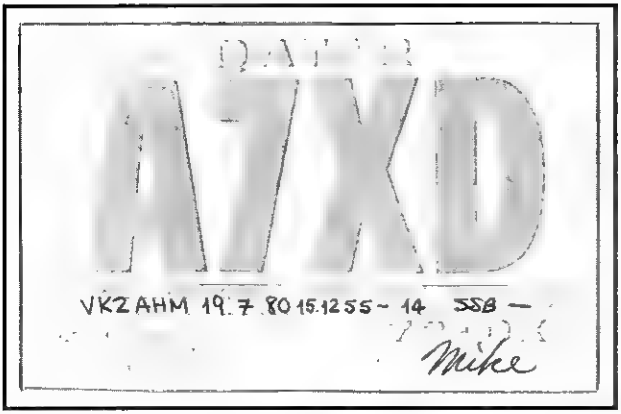
MP4QBK

This QSL shows the geographical location of Qatar. It is a small emirate, only about a third of the area of Tasmania, jutting out into the Arabian Gulf. The better known island of Bahrain is just west of the peninsula and Saudi Arabia, and the United Arab Emirates border is to the south.

It is a desert country of sand and salt marshes. Years ago the lack of rainfall was the greatest problem impeding the development of the country. However, with its great oil reserves, much of the country's potable water is now derived from the distillation of sea water.

In the October 1952 edition of *QST*, the announcement was made of the addition to the ARRL post-war countries list of Qatar. The announcement added that "to our knowledge no official prefix has been assigned to this country". DXCC credit was dated from 15 November 1945. The prefix MP4 came to be used by Middle East forces occupying the country. This widely used unofficial prefix was similar to the series of MD prefixes issued to





British Occupation Forces in such locations as Eritrea, Cyprus and Tripolitania. The MP4 prefix was shared with Bahrain and Trucial Oman

At the time of their use the official M prefix had been allocated to Great Britain, which country chose to use the G series of prefixes in preference to the M prefix. (We did see Great Britain use the prefix M in 1991 when the call MORSE was used to celebrate the bicentennial of Samuel F B Morse.)

The serrated edge of this QSL is part of the Qatari flag which is maroon with a white serrated border at the hoist

There were a considerable number of operators using MP4Q calls. MP4QAD, QAH and QAO were active in the 1950s, and QAQ, QBF, QBB, QBG, QAR and QAL in the 1960s. One of the most active hams was Don MP4QBF (G3IZU) who gave so many operators their first confirmed QSO with Qatar This QSL was sent to Mavis AX3KS for a QSO in February 1970.

A7XD

Qatar had been a British Protectorate since 1916 but, on 1 September 1971, the country gained its independence. From this time to the early 1980s the new prefix A7 was used This A7XD QSL was sent from the QTH of Doha, the capital of Qatar and really the only city of importance. Almost all of the operators at this time were, in one way or another, connected with the oil industry. The QSL was sent to "SK" Jeff Whyte in August 1980.

A71BK

This most attractive QSL was sent to "SK" Ken Gott VK3AJU for a QSO held in December 1986. It used the new A71 prefix which was issued in the early

1980s. The mosques in the background indicate that the country is a Muslim one. Arabic is the official language although English is used extensively for commercial purposes. The current Emir is of the al-Thani family, whose members dominate all major ministries. The current Emir has absolute power with authority to enact all laws. He rules under the guidance of strict Islamic law. However, such rule would seem to be a little less puritanical than that obtaining in Saudi Arabia, in that picture theatres are allowed and women may be issed with drivers' licences. Bans on alcohol are strictly enforced.

Before oil production started in 1947, Qatar was one of the world's poorest and least developed countries. Today, due to its oil deposits (discovered in 1940, but not explorted at the time due to the war in the Middle East), it has a very high per capita income. Less than a quarter or so of the population are native born Qataris, the others being imported workers. Free education and medical benefits are available to all Qatari citizens. Although Qatar was opened up to tourism in the late 1980s, this enterprise is still in its infancy. In any case, over 90% of the country's income is derived from oil and gas. One of the country's future difficulties is the lack of employment opportunities for its increasingly well educated population. Nevertheless, recently discovered natural gas deposits of incredible size would seem to ensure a promising future for Qatar.

Thanks

The Federal body of the WIA would like to thank the following for their kind donation of QSL cards towards the collection: Mike VK6HD, Jim VK9NS, Tad VK3UX, Ossie VK3AHK, George VK3GI, Peter VK3QI and John VK4AAF Also to the family of "SK" Ron O'Connor VK3BRC.

Author's Note

If you enjoy reading this series of articles on QSLs of the WIA collection, would you like to contribute a few QSLs yourself? Commemorative (special issue), pre-war and rare DX QSLs are particularly appreciated. All donations are personally acknowledged.

4 Sunrise Hill, Montrose VIC 3765 Tel (03) 728 5350

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Repeater Link

*Will McGhie VK6UU**

On Holiday

Having spent two weeks in Bali, coming back to the fees debate was not my favoured choice. The only amateur radio I thought about in Bali was to wonder at the two metre antennas all over the island. All sorts of two metre commercial amateur antennas are in evidence right round the island. I gather part of the 144 to 148 MHz band is used for other than amateur radio.

Whingeing

This months *Repeater Link* does a fair bit of whingeing. I make no apology for this, as I believe amateurs are not receiving a fair go, particularly in the voice repeater scene. The invasion of our two metre band by pagers, the fees situation, and the long awaited change to the repeater regulations, has me stirred up. I have tried to keep to the facts as I believe them to be. Unfortunately, I have more questions than answers. What is written in this column are my views and may not be accurate. Any input, particularly your views on the pager invasion into two metres, would make for a wider discussion.

Pagers World Wide

Ever wondered if Australia is the only country in the world that has pager transmitters located right alongside our prime VHF band, two metres, with no guard band? I know I have. I have not seen any reference to pagers causing a problem to any amateur bands elsewhere in the world.

This started a request via packet radio for information on where pager transmitters are located in other countries. I have received several replies so far and this is a summary of that information.

From 4F3AAL Philippines: 148.975 MHz is the only pager. The amateur band is 144 to 146 MHz only but this pager causes considerable problems.

From VS6XFK Hong Kong: 172 MHz, 280 MHz and 922 MHz pager bands with no pager problems to amateur bands.

From G0GTF Great Britain. Tim sent me a long list of pager frequencies from around the world too detailed to reproduce, so I have only included a couple from the UK. Of the 40 or so pager bands used around the world that Tim has recorded, none come anywhere near any amateur bands, the closest being the 454.025 MHz shown below. 454.025-454.825 MHz, UK private paging systems. 138.175 MHz, UK nationwide pagers, with power up to 100 Watts.

From DG5MEC Germany: Paging frequencies around 465 MHz with power outputs up to 100 watts ERP.

From HB9AYH Switzerland: 4 channels at 147.300, 147.325, 147,375 and 147.400 MHz. The new European ERMES paging system uses frequencies around 169 MHz. We still have two high power paging networks with Tx powers around 1 kW at 72 and 87 MHz using AM modulation, but these networks will be phased out soon.

I have tried to obtain information from the USA but, to date, no luck. Even though this is a small sample it supports what I already thought. Australian amateurs have a world first in having a high power pager band right alongside a primary amateur band, with no guard band. In light of the fees debate and what the SMA do for us amateurs, and charge for, perhaps the time has come to tackle the SMA in a serious way over pagers.

Time has shown that this decision of pagers so close to our two metre band has had a detrimental effect. It has resulted in an increased work load for the SMA and, one could conclude, an increased cost to us amateurs with increasing SMA charges. It all seems a bit unfair. Poor decision on the location of the pager band, resulting in serious interference to our band and, as a final insult, we pay more to administer the result.

How Did It Start?

In VK6 the first pager appeared in Perth about 15 or more years ago. There was only one and it was located at the ABC Television tower in the hills overlooking the city, on a frequency of 148.0125 MHz. That's right! No messing around. It was put as close to the top end of two metres as could be.

Right from the start this pager caused some problems to our two metre band although of a minor nature by today's standards. Some rude comments were made by a few amateurs inconvenienced by its tendency to produce loud noises on their two metre equipment. It had fantastic coverage and was even used by some as a beacon source to gauge propagation.

There was little effort to tackle the authorities over this one pager and, anyway, it might just go away. How wrong could you be? The number of pagers continued to grow along with the number of commercial companies providing competitive services. Today two metres is invaded by pagers. This poses a number of questions.

Questions

Who decided to place these high powered transmissions so close to another service? Were they aware that this decision would cause considerable interference to the amateur two metre band? What investigations were carried out prior to making the decision? Was the location of pager bands around the world taken into consideration? Was the WIA consulted?

Answers to any or all of these questions would go a long way towards a better understanding of how frequency planning is carried out in Australia. In my opinion it is a waste of time and money to try and have the pager band moved due to the two metre interference alone. Other factors may see the pager band move or be phased out. What I would like to see is an honest answer to questions about the pager band and an admission that errors were made. Also, I would like to see an undertaking that no other services be located so close to another amateur band. At the very least, consultation with us amateurs before such a decision is made. The final chapter on the pager band is yet to be written.

Repeater Licence Costs

At the time of writing the change in repeater licence costs has just been announced by the SMA. $24 per year for each transmitter, links excluded. Depending on your licence situation this can be good or bad. If your club has only one transmitter and doesn't plan to add any extra, then you are in front. However, for many repeater clubs the change will result in large increases. Here are some examples.

The Southern Electronics Group in VK6 operate two voice repeaters, one digipeater, four beacons, a club station and a BBS at several sites. The result is that their old licence fee increases from $148 to $219.

The North West Amateur Group operate two HF transmitters and two VHF transmitters at one site while, at another site, a VHF repeater and digipeater. The result is that the old licence cost is $74 and the new $124.

From the Elizabeth Amateur Radio Club an impressive list of systems. The club runs the following on the VK5RLZ license. Voice repeaters on 29.620 MHz, 146.625 MHz, 438.475 MHz, and 1273.550 MHz. An ATV repeater on 2.415 MHz, and 10.350 GHz FM. Beacons on 1296.550 MHz, 2403.550 MHz, 3456.550 MHz, 5760.550 MHz, and 10368.550 MHz

Currently the club pays $76 per year. Mark VK5EME, who sent me this information added, *"The new overall cost will be $315.00, so we will have no choice but to turn off some of the equipment. Looks like the amateur radio operators in Australia will be left behind compared with the rest of the world, if we have to pay big bucks to advance our experiments. I find it hard to accept that the hobby has so many restrictions placed on repeaters and beacons, and that we cannot just build them up and let the WIA know where the thing is so that everyone can use it"*

In VK6, our Repeater Club WARG is looking at an increase from $370 to $540. This figure has made a few assumptions. For example, there is a WIA news link on 146.3 MHz, which is not a normal link frequency. Will this attract a $24 charge? There are also plans to add a 29 MHz FM system and two 53 MHz systems, one voice and one packet, along with another digipeater. The result an additional $96.

Consultation?

When the new fees for our amateur licences were announced, consultation was rumoured to have taken place between the WIA and the SMA. Note I say rumoured, as the WIA make the claim that there was no consultation, some others have said there was, and the SMA have said nothing. So, was there any consultation between the SMA and the WIA, or someone representing repeater and beacon systems, before the change in licence costing for repeaters, etc? I have a strong interest in all matters relating to voice and digital repeaters and like to think I'm in touch, yet I heard nothing. It appears to me that the SMA presented the changes to repeater licensing without consultation.

The changes to the way repeaters are to be licensed is a fundamental change with far reaching consequences. Many clubs or individual amateurs have a long term view of where their repeater systems are going. The time frame is often open ended as amateur radio does not conform to deadlines. Suddenly the licensing structure is changed and the annual licence cost for some developing systems goes up by several times. This increase in costs could effect the whole viability of the project, or require it to modified considerably. As if the technical difficulty of the project is not enough, now added costs occur with no meaningful consultation

Even as I write this I have heard that the $24 per transmitter licence may be changed back to the one licence for all systems on a given site. It sure makes it hard to know just where we are at. With so many changes coming and going, how can amateurs be expected to make much sense out of it all? But comment we must because our silence will be taken as acceptance. Even though by the time you read this the ground rules may have shifted several times, at least there will be some record of policy on the run. Did I really say that?

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International Amateur Radio Union Monitoring Service (IARUMS) — Intruder Watch

*Gordon Loveday VK4KAL**

It alarms me that most of the Intruder Watch observers are elderly. The younger amateurs and SWLs seem to be reluctant to use pen and paper as has been required to maintain a log and post it away each month.

One of our elderly observers here in VK4 approached me about the use of packet radio instead of Australia Post, which occasionally loses a package. We discussed the matter and I'm prepared to give it a trial. For those not on the packet system, it will still be by post. My packet address is shown below.

The packet format should be: Date, Time UTC; Frequency; Mode; ID if heard; Bearing, if you are using a beam; and Signal Strength, preferably using SINPO.

I leave it to the observer to decide how often they forward to me, that is daily or weekly.

(Space was unavailable for the list of intruders, numbering 25 on all bands 3.5 to 24 MHz and reported by VKs 4EKA, 4AKX, 4BBX, 4BTW, 4BXC, 6XW and 6RO. Ed)

**Federal Intruder Watch Co-Ordinator,*
Freepost No 4 Rubyvale QLD 4702
or VK4KAL@VK4UN.T

Spotlight on SWLing

*Robin L Harwood VK7RH**

In last month's column I mentioned that it is increasingly difficult to find the "Voice Of Russia" these days. Well, just a few days ago I received their English schedule for the Australia/Pacific area from them:
0600-0700 hrs 21625, 17870, 17590, 17570 and 15560 kHz;
0700-0800 hrs 17870, 17695, 17590, 17570 and 15560 kHz;
0800-1000 hrs 17870, 17765, 17695, 17590, 15560, 11900, 11800 and 9835 kHz (15560 off at 0900);
1000-1100 hrs 17870, 17765, 17590, 11800 and 9835 kHz.

I also received a program schedule which indicated that they are still broadcasting a full 24 hour World Service English output, yet I am not receiving Moscow beaming to other areas, which is indicative that there have been severe cutbacks to their transmitter output. They also state that the number of foreign languages is now 31.

For the past 50 years, the International Committee of the Red Cross (ICRC) in Geneva, Switzerland has been making monthly broadcasts over senders supplied by the Swiss PTT. Programming was also included in transmissions of Swiss Radio International. Well, the Red Cross Broadcasting Service suspended their monthly broadcasts in March and have begun to re-organise their output, which will allow them to make increased use of their facilities on a more regular footing than at present. 7210 kHz has been allocated to the ICRC for their broadcasts, although other broadcasters do make use of this channel also. It would perhaps be a good idea to keep this channel in mind although, clearly, they will need to use other channels to reach audiences outside continental Europe. I believe that programming from the Red Cross Broadcasting Service will continue to be made but incorporated into existing SRI output and not separate as present.

We all have been rather confused with the rapidly changing maps of Eastern Europe since the end of the so-called Cold War. Now comes news that Liechtenstein, that tiny principality sandwiched between Switzerland and Austria, has also switched allegiances. On the first of January 1995, Liechtenstein opted to join the EEU with Austria whilst the Swiss rejected joining it. The result is that Swiss customs and border guards moved from the Austrian-Liechtenstein border, where they had been for six decades, to the almost non existent Swiss-Liechtenstein border. The Austrian public broadcaster has already installed FM repeaters in Liechtenstein and TV translators will soon follow. This probably means that Liechtenstein will use the OE prefix instead of HB0. The following information came from Celia VK7NBH/HB9ZBH who recently toured around Tasmania.

The United Nations in Geneva has re-introduced broadcasts after an absence of five years. You may have been one of the very few to hear their weekly broadcasts to the Soviet Union, close to the 14 MHz amateur band. Now they have commenced broadcasts in French and English on weekdays around 10471 kHz between 0600 and 0700. However, these do not seem to be regular broadcasts and they could be varying about in time and frequency. Target areas are in the former Yugoslav republics and in the Mid-east. They are on the R3E mode (upper sideband with reduced carrier).

There was a station earlier this year on 1341 kHz broadcasting continuous music, for example the "The Three Tenors in LA" without any identification announcements. Then it went off for a few months and has now re-appeared with Chinese pop music, yet I still haven't heard any voice announcements identifying the station or its location. I have heard rumours that it is in the Geelong area which matches its daytime signal strength here. Anybody able to elucidate?

Does anybody know if the Fidonet echo called "OZ-SW" is still active in your area? The feed to my local Fidonet BBS has been idle for six months and, despite repeated enquiries, I have drawn a blank. It would be a pity that a local echo devoted to SWLing would die through either apathy or indifference as there is sufficient information for a local, Australian base. The Internet "rec.radio.shortwave" echo is supposedly international but at present is filled with comments on WWCR's broadcasting of far-right extremist groups. Not really relevant for this area, I would think.

Well that is all for this month. Don't forget if you have any information, I can be reached at the postal and electronic addresses listed below.

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Fidonet . Robin.Harwood 3:670/301@fidonet.org

Silent Keys

Due to space demands obituaries should be no longer than 200 words.

The WIA regrets to announce the recent passing of:-

A	GRIFFARD	VK2AGN
R E	JAMES	VK2DZI
G W (Geoffrey)	THORNTON	VK2IP
E H R (Erich)	REIMANN	VK2WH
S (Samuel)	BROWN	VK2ZBN
A E (Albert)	CARLYLE	VK3AUN
H G (Hubert)	WILLIAMSON	VK3GW

Hubert Gordon Williamson VK3GW

It is my sad duty to report that Gordon became a silent key on 28 May 1995.

Gordon was born in 1907 and was first licensed in 1927. He became a member of the Citizen Air Force in 1934 and was called into active service in July 1940. He saw active service with No 4 Radio Installation and Maintenance Unit in Nadzab, New Britain, Altape, Noemfoor Island and Morotai Island.

He was discharged with the rank of Warrant Officer in 1945 and bought a property in Rainbow, Victoria which he worked for several years. When he left the land, he worked in the programming section of the ABC's Radio Australia until retiring.

He was an active member of Doncaster RSL, being honoured with life membership in recognition of his work.

Amateur-wise he was active on the bands until the Thursday before his death. He will be sadly missed.

Gordon is survived by his sons Ross, Barry VK3HT, daughter Pam and five grandchildren.

David Parry VK2CX
On behalf of the family.

Albert Ernest (Bas) Carlyle VK3AUN

"Bas" became a silent key when, at the age of 81, he passed away suddenly at home on May 25, 1995.

"Bas" was educated at Scotch College in Melbourne and was both a Master Mariner and pilot. He became interested in amateur radio in his later years and was a staunch supporter of WIA Victoria and a keen DXer

"Bas" is survived by four daughters, eight grandchildren and a great grandchild.

Barry Wilton VK3XV

VHF/UHF — An Expanding World

*Eric Jamieson VK5LP**

All times are UTC.

Six Metres Standings List

The corrections to the last Six Metres Standings List appeared in April. **John VK4KK** has asked if, in the future, I will be accepting any further up-dates for my records. I see no reason why I should not do so. Now that the database is organised, it takes little effort to make an upgrade, so, if anyone, including newcomers, would like to send me details and confirmations of countries contacted, as in the past, I will accept them. Who knows, down the line I might decide to run a list again! My records already provide information of an historic nature, which will become more valuable with the passage of time.

Packet Radio

As you may note from the packet line with my QTH information, thanks to Steve VK3OT initially, and Grant VK5ZWI recently, I now have my packet arrangements organised and am in a position to receive and send messages. I'm still a bit nervous so please be patient — an old hand entering new territory!

State Visit!

Recently, I was favoured with a "state visit" from Garry Herden VK5ZK, President of the VK5 Division of the WIA; Charlie McEachern VK5KDK, Vice-President; Bob Allan VK5BJA, Federal Councillor and Journal Editor; and Grant Willis VK5ZWI, Co-FTAC representative. With so many "heavies" of the WIA in the house, my wife Merna thought it prudent to invite them to lunch!

After lunch they were part of a small ceremony where Garry presented me with the recently awarded "G A Taylor Medal". I almost felt nervous in front of so many high-ranking people, and the cameras, but I survived. It was a happy occasion and one I will always remember. The medal now has its place on the mantelpiece amid nine other awards of various types.

Antarctica

The subject of working Antarctica surfaces again. In the May issue I mentioned that VK3OT, VK5NC and VK5KK formed an exclusive club to have worked seven continents on six metres. I now find Roger VK5NY and Nev VK2QF also qualify for that club, a total of five. I am not sure whether anyone from Melbourne qualifies — if so, please advise me. So perhaps the wording should have been, "VK3OT, VK5NC and VK5KK appear at this stage, to be the only amateurs to form an exclusive world club of operators who have worked seven continents on six metres." That should give me a "let-out" if more names appear. Sorry, Roger and Nev.

While we are on the subject of Antarctica, about 8 am local on 17 May, 5ADFM in Adelaide broadcast a short telephone interview with Darin Roberts VK0IX at Casey Base. The occasion was his mother's birthday and Geoff Sunderland, the announcer, had dragged Darin from his bed at 4 am, to send birthday greetings. Darin said the morning was a little warmer than usual with the temperature at -18°C! The wonders of the modern telephone network.

King Island

A brief message states that **Bob Jordan VK7JR,** of Currie (QF10), on King Island in Bass Strait, is coming on six metres with a Tokyo Tri-band hand-held, for a start; this may lead to further ventures. King Island is a large island, about mid-way between Cape Otway in Victoria and Cape Grim in Tasmania, or about 120 km in either direction. Currie is on the western side. Except for the necessary part of King Island, the remainder of the path will be all-water, which should provide signals to VK3, VK5 and VK7. It would provide a fantastic take-off to Albany and other places in Western Australia if use could be made of the bands 144 MHz and above. I wonder what it costs to move there?

Western Australia

Graham Rogers VK6RO sent me a FAX to say that since 1 March 1995, six metres has been very quiet; the only suggestion of signals has been video carriers on 46.171, 48.240, 48.250 and 57.250 MHz, the latter at S9 from Port Pirie, South Australia. The carriers are usually heard between 0700 and 0900. Graham's FAX number is 094513561 and provides another means for operators to warn him of potential contacts.

The May 1995 issue of *The West Australian VHF Group Newsletter* reports that during past months Al VK6ZAY and Alan VK6ZWZ have made successful 5.4 GHz contacts over a distance of nine km, S3 reports each way. These efforts are likely to see the WA 5.4 GHz record fall.

Also included was news that the 1296 MHz beacon had been rebuilt by Al VK6ZAY as part of a upgrade of beacons by the beacon committee. The 1296 unit has been delivered to Don VK6HK who is rebuilding the exciter. No doubt I will be informed when the beacon becomes operational.

The Newsletter includes helpful construction information for building your own 2.4 GHz satellite down-converter from the VK5 VHF Group kit. If you need assistance to obtain best results, I am sure that a SASE to the Group at PO Box 189, Applecross, WA 6153, will produce a copy.

Beacons

In the June issue I mentioned the receipt of a list of world-wide 50 MHz beacons, initially on e-mail from Geoff GJ4ICD and sent to me by Dave VK2KFU, also from Tony VK5KTY via BBS. An updated list at 16/5/95 has been received with more than 20 corrections.

Beacons of particular interest to VKs are 50.019 P29BPL QI30 Port Moresby; 50.005 VK9RNI FK52 25 watts Norfolk Island; 50.050 FO5DR BH52 50 watts Mahina; 50.061 KH6HME BK29 20 watts, and 50.073 (changed from 50.064) KH6HI BL01 60 watts, both Hawaii. Useful places for beacons would be FK8, 5W1, YJ8, H44, 3D2 to mention a few.

From Europe

Ted Collins G4UPS reports for April that the first Es opening of the coming season occurred on 15/4 and was confined mainly to southern UK. The band opened to I, S5, YU, with G3HBR near London reporting hearing 9H5EE. A selective opening on 20/4 produced SP6GZZ.

A major aurora on 7/4 from 1445 to 2030. Countries worked: DL, EI, F, G, GD, GI, GM, GW, ON, OZ, PA, SM and S59.

Ted reports that since 1 January this year, he has worked 25 countries with a four element Yagi at 30 feet and with 25 watts. This represents 25% of his DXCC on six metres in four months, which he considers "not bad!" Also, Ted is pleasantly surprised at the frequent QSOs managed with SM7AED every morning that he is available. He says, *"Despite what the experts say I feel there is some element of enhanced tropo involved — why are we not hearing of more regular QSOs on 6 m than the morning skeds between myself and G3CCH and SM7AED and occasionally SM7FJE, and between G3CCH and SM7AED? None of us regulars has a big station so why are we not hearing other regular signals on the band?*

A reminder that the distance between myself and SM7AED is 1200 km! Despite

repeated requests I have yet to meet others that work over this kind of distance, even with a large setup, on such a regular basis."

I can remember that, back in the AM days of the 1960s, Bob VK5ZDX (now VK5MM) and Wally VK5ZWW (now VK4DO), were for some time involved in forward scatter experiments on six metres between Adelaide and Sydney (1200 km) and Adelaide to Alice Springs (1350 km). Both paths were all-land and I believe they had reasonable success. Wally operated from an elevated site near Blackwood and ran about 100 watts to a nine element Yagi, so his ERP would have been greater than that of Ted, but his contacts were AM, without the advantages of CW when the going became tough. In Ted's case I am sure there is a forward scatter component, with tropo enhancement at times, particularly as a water path is involved.

I see from Ted's report that 7 April was an interesting day, with contacts spread over much of the UK, and into Europe to DL, EI, ON, OZ, PA and S59, with many signals having an auroral content. With the approach of the Northern Hemisphere summer, it will be interesting to see how many European countries activate their six metre gear for Es contacts, or whether, in the main, they are content to wait for the next F2 peak in several year's time. For many years, we in Australia have been conditioned to expect continent-wide Es openings each summer and for a short period mid-winter, hence the bands fill with signals for the appropriate time.

At the time of this writing, **Geoff GJ4ICD** would be settled in D4 (Cape Verde) for his DXpedition and hoping for propagation enhancements to include

WIA News

New Licences Available Now!

The new amateur radio station licence privileges and operating conditions were gazetted by the government on Friday, 2 June 1995 in a 76 page issue of the Government Gazette devoted entirely to the five relevant Technical Licence Specifications (TLSs).

There are now seven amateur licence sub-types under the general amateur licence type created by the SMA earlier this year, following revision of the Apparatus Licence system. The sub-types are: Unrestricted, Intermediate, Limited, Novice and Novice Limited, all for individual amateur operators, in addition to Amateur Beacon and Amateur Repeater sub-types, the TLSs for which have not yet been finalised.

The Novice Limited is an entirely new licence. It will be issued to people who have gained passes in the Regulations and Novice Theory Examinations. No Morse code is required. The new Intermediate licence replaces the old Combined Limited and Novice.

According to official advice received on 5 June from the manager of the Compliance and Licensing Directions Team, Business Directions Group of the Spectrum Management Agency, Alan Jordan, new and renewed licences, including the new Novice Limited licence, issued from 6 June 1995 will reflect the gazetted changes. Reference to the Technical Licence Specification (TLS) will be printed on the licences.

The SMA advice said amateurs with existing licences may operate under the TLS relevant to their existing licence. For example, amateurs with a current Combined Limited and Novice Licence issued before 6 June may operate within the provisions specified in the Amateur Intermediate TLS. Similarly, amateurs with a current Novice licence issued before 6 June 1995 may operate within the provisions specified in the Amateur Novice TLS. New Novice Limited licensees will be issued with callsigns in the VKxHAA to HZZ block, the letter "H" being the identifier.

The new no-code Novice Limited licence allows operation on the 2 m and 70 cm bands, using digital (packet and RTTY) and FM voice modes and a maximum RF power of 30 watts (average).

Novice licensees are now able to use more power: 100 watts peak (eg SSB) and 30 watts average (eg CW and FM). They are allowed more frequencies and operating modes: an extra 100 kHz on 15 m, more than 500 kHz on 2 m below 145 MHz, 433-435 MHz and 438-440 MHz on 70 cm, and to use digital (packet and RTTY) modes.

Limited Licensees can now use 10 m, from 29.0 to 29.7 MHz, FM, and wideband emissions are permitted on bands above 420 MHz, providing the necessary bandwidth is within a band's limits. Wideband modes include such things as AM and FM television, spread spectrum and pulse modulation transmissions, high speed data transmissions and those "not yet invented".

Intermediate Licensees are no longer restricted to low power on the bands below 50 MHz, now being permitted 400 watts peak and 120 watts average, as well as use of the full 80 m, 15 m and 10 m bands and additional Limited licence privileges.

Unrestricted licensees gain the use of wideband emissions above 420 MHz. Although gazetted on 2 June, the new licences could not be issued by the SMA until 6 June as the Agency's new RADCOM computer system was not ready to issue them around Australia until that date.

Copies of the TLSs and related documents are available from your nearest SMA office. There are eight documents: the five TLSs, a relevant extract from the Radiocommunications Act 1992, a relevant extract from the Radiocommunications Regulations and amendments, and a relevant extract from the Definitions Determinations No 1993 (Amendment No. 2).

contacts in the 4000 km range. More later.

The July issue of *Six News*, the UKSMG journal, will include an article titled "Radio & the Internet", by Geoff GJ4ICD. The Internet is described and he tells of all the interesting subjects to which you can gain access. One item which interested me related to the average monthly solar flux levels as issued by NOAA in the USA. July 1995 is listed as 12 and the predicted figures decrease until the low of 7 is reached during April and May 1996; twelve months later they will be 23 and 26 and 60 at December 1997. The highest reading for Cycle 23 is listed as 175 in February 1991, with the next highest 172 in February 1992!

The Brendan Trophies

Emil Pocock W3EP, in the June 1995 edition of The World Above 50 MHz in QST, reports, *"The Irish Radio Transmitters Society (IRTS) announces that it will award the Brendan Trophies to the first pair of stations to make a two-way contact on 144 MHz between Europe and America, using terrestrial propagation.*

The trophies are named after St Brendan the Bold, a 6th-century seafaring Irish monk. Irish sailors certainly reached Iceland prior to 800 AD, but Irish legend credits Brendan with sailing to some more distant land — presumably the American continent. Although there is no evidence for this remarkable achievement (Brendan never returned from his last voyage and all traces of him were lost), the Brendan legend has inspired centuries of transatlantic explorers. Now Brendan inspires a 20th-century version of the legend. Who will be the first to cross the Atlantic on 144 MHz?

During November 1946, "World Above 50 Mcs" editor Ed Tilton, W1HDQ, began transmitting tests with G6DH on the new 6 metre band. On the 24th, G6DH called frantically on 10 metres that he was hearing Ed on 50 MHz! British stations could transmit only above 58 MHz, but the MUF never got that high over the hour or so W1HDQ was heard in England. The first two-way transatlantic 6 metre contacts had to wait until the following year, when the British got temporary authorisation to operate as low as 50 MHz. On November 5, 1947, W1HDQ finally made it official with G5DH for an all-50-MHz transatlantic first.

That is where the record highest-frequency transatlantic QSO, using terrestrial propagation modes, has stood for the past 48 years. The Atlantic has been spanned countless times on 144 MHz and higher via EME, of course, but no one has yet been able to confirm a two-way without the use of the moon, or repeaters on artificial satellites. That is the challenge of the Brendan Trophies.

The Brendan Trophies are specially inscribed cut glass vases provided by Waterford Crystal of Ireland. One trophy will go to the European station and the other to the North or South American station that completes the first authenticated 144 MHz transatlantic contact using natural terrestrial means of propagation."

I wonder what form of award we would receive if someone from VK accomplished the task? Should we send signals across the US or Asia/Europe? However, joking aside, Hawaii is about 8000 km from Sydney and 7000 km from Auckland. In the light of confirmed two metre contacts at 6763 km between VK4 and Japan using low power, the Hawaii distances don't seem impossible, but the angle across the equator may be the stumbling block. It will also take dedicated operators at both ends of the circuit, with much time spent listening to receiver noise.

End of an Era

With the June issue of *ARA*, Steve VK3OT provided his last column, having written *About Six* for the magazine since Issue 1 in 1977. As someone who has always read his columns, I say thank you Steve for the time and dedication given to the provision of news for others to read, and in doing so much to promote the use of the 50 MHz band.

Steve and I swapped information on many occasions and our telephone accounts were quite large, particularly during the peak of Cycle 22. Steve closed his column by saying, *"Don't forget to keep the magic-band alive. Have fun and be considerate."* I would like to add, *"Thanks Steve for your part in keeping the magic-band alive!"*

South Africa

Hal ZS6WB believes that a concerted effort should be made to contact Australia on six metres using the path over Antarctica. He is of the opinion that, last year, missed opportunities occurred in working Australia.

The ZS operators suggest that there be three dedicated beacons at each end of the path beaming over the South Pole, and running 50 watts or more of CW. They suggest all beacons should operate within a few kHz of each other, so any station listening need only monitor one frequency.

Beacon sites in South Africa are proposed for ZS1, ZS5 and ZS6, the areas of greatest activity, and they will try to have the beacons in place by October. Hal will attempt to arrange a telephone alerting list of participating stations at each end.

They would like to see a prime contact point in each country, and two alternate stations who are prepared to be on call. These stations would be responsible for a general propagation alert.

Two suitable beacons in Australia would be VK3SIX on 50.0535 and VK7RNW on 50.057. The VK4RGG beacon may be too distant, but it was observed during the 1991 ZS openings that the path to VK4 opened about 30 minutes after the VK3/5 path occurred, so it could be useful. Reliability and useful power seem to be prime requisites, the latter being achieved more readily by the use of a high gain directional antenna rather than increasing output power from the transmitter, the latter being less cost effective.

Hal will eventually report details in the *50 MHz DX Bulletin* which is edited by K6FV. Hal Lund ZS6WB can be contacted at PO Box 27746, Sunnyside 0132 RSA or FAX to 012 45 2735. Home/Office phone is 012 45 2737. Packet to ZS6WB@ZS0CLP.TVL.ZAF.AF for least fastest mode.

Closure

From the lack of reports there appears to be little overall activity on any band in VK, except for the continuation of interest in 10 GHz, of which we will read more in later months.

Closing with two thoughts for the month:

1. If people fought sin as hard as they do middle age, earth would be a moral paradise, and,
2. Politicians are people who, before election, promise a car in every garage. After an election? They get busy putting up parking meters.

73 from The Voice by the

STOP PRESS ITEM

Steve VK3OT has just telephoned an item of interest, following a message from Peter VK1RX.

A notice is published in the June *Government Gazette* to the effect that amateurs on the east coast of Australia are now permitted the use of the band 50.000 to 50.300 MHz, bringing them into line with the rest of Australia. This has been a gain of the lower 50 kHz and the upper 100 kHz. An additional facility is that RTTY is now sanctioned.

The above is a brief outline of the changes. No doubt *Amateur Radio* will carry the full story. Thanks to those amateurs who placed submissions to the SMA regarding extended use of the band.

**PO Box 169, Meningie SA 5264*
Fax (085) 751 043
Packet: VK5LP@VK5WI #ADL #SA.AUS.OC

HF PREDICTIONS

Evan Jarman VK3ANI

The Tables Explained

The tables provide estimates of signal strength for each hour of the UTC day for five of the bands between 7 and 28 MHz. The UTC hour is the first column; the second column lists the predicted MUF (maximum useable frequency); the third column the signal strength in dB relative to 1 μV (dBU) at the MUF; the fourth column lists the "frequency of optimum travail" (FOT), or the optimum working frequency as it is more generally known.

The signal strengths are all shown in dB relative to a reference of 1 μV in 50 ohms at the receiver antenna input. The table below relates these figures to the amateur S-point "standard" where S9 is 50 μV at the receiver's input and the S-meter scale is 6 dB per S-point.

μV in 50 ohms	S-points	dB(μV)
50.00	S9	34
25.00	S8	28
12.50	S7	22
6.25	S6	16
3.12	S5	10
1.56	S4	4
0.78	S3	-2
0.39	S2	-8
0.20	S1	-14

The tables are generated by the GRAPH-DX program from FT Promotions, assuming 100 W transmitter power output, modest beam antennas (eg three element Yagi or cubical quad) and a short-term forecast of the sunspot number. Actual solar and geomagnetic activity will affect results observed.

The three regions cover stations within the following areas:

VK EAST The major part of NSW and Queensland.

VK SOUTH Southern-NSW, VK3, VK5 and VK7.

VK WEST The south-west of Western Australia.

Likewise, the overseas terminals cover substantial regions (eg "Europe" covers most of Western Europe and the UK).

The sunspot number used in these calculations is 16.0.

ar

VK SOUTH — SOUTH PACIFIC

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	14.4	15	10.8	7	18	2	-12	-34
2	14.8	16	11.1	8	17	4	-9	-30
3	14.9	16	11.2	11	18	5	-9	-29
4	14.9	18	11.2	17	20	6	-9	-30
5	14.6	20	10.6	27	19	1	16	..
6	12.1	24	9.1	38	13	10	-34	..
7	10.4	27	7.9	39	3	-27	..	..
8	9.0	29	6.8	38	-8	..	..	..
9	8.1	31	6.1	37	-20	..	..	..
10	7.5	32	5.6	35	-30	..	..	..
11	7.1	33	5.3	33	-37	..	..	..
12	7.1	33	5.3	33	-37	..	..	..
13	7.0	33	5.2	33	-38	..	..	..
14	7.0	33	5.2	32	-39	..	..	..
15	7.1	33	5.3	33	-37	..	..	..
16	8.2	34	4.8	28	..	..	..	..
17	8.2	34	4.8	28	..	..	..	..
18	8.5	33	5.0	30	..	..	..	..
19	8.6	33	5.1	30	..	..	..	..
20	7.6	26	5.9	28	-26	..	..	..
21	9.7	20	7.5	23	-9	-34	..	..
22	11.5	17	8.9	15	7	-14	-36	..
23	12.9	16	9.8	10	12	-5	23	..
24	13.7	15	10.4	7	14	0	-16	..

VK WEST — SOUTH PACIFIC

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	[redacted]	12	12.7	-16	15	9	0	-13
2	17.6	[redacted]	13.3	-17	16	11	3	-10
3	18.2	12	14.1	16	17	13	5	-7
4	18.3	13	13.7	-10	19	14	6	-7
5	18.2	15	13.7	0	22	15	6	-7
6	18.8	18	12.5	18	24	13	1	-15
7	14.3	21	10.8	32	22	6	-9	-31
8	12.3	25	9.3	38	17	-4	-24	..
9	10.8	28	8.0	39	9	-16	..	..
10	9.5	30	7.1	40	2	-29	..	..
11	8.9	32	6.7	40	-2	-35	..	..
12	8.5	32	6.4	39	-5	..	..	..
13	8.5	32	6.3	39	-6	..	..	..
14	8.4	32	6.3	38	-6	..	..	..
15	8.4	32	6.3	38	-7	..	..	..
16	8.5	32	6.3	39	-8	..	..	..
17	7.5	34	5.8	38	-16	..	..	..
18	7.6	34	5.8	36	-16	..	..	..
19	7.9	33	6.0	37	-12	..	..	..
20	8.0	27	6.2	29	-11	..	..	..
21	9.3	21	6.8	21	0	-28	..	..
22	11.9	17	9.2	11	10	-7	-25	..
23	14.2	14	10.9	1	14	3	-10	-29
24	15.8	13	12.1	-11	15	7	-2	-18

VK EAST — AFRICA

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	8.1	12	6.2	10	-9	-37	..	..
2	8.9	2	5.5	3	-13	..	..	..
3	8.9	-5	5.3	-3	-12	-36	..	..
4	9.3	1	7.3	-15	-1	-17	-35	..
5	13.4	5	10.3	-30	5	-1	-11	-27
6	15.4	6	12.1	..	6	3	-5	-16
7	14.9	6	11.1	-30	8	2	-8	-20
8	13.1	8	9.8	-28	8	-2	-13	-30
9	11.1	5	8.5	-17	3	-9	-24	..
10	9.5	5	7.1	-9	0	-18	-38	..
11	8.3	5	6.2	0	-5	-29	..	..
12	7.9	10	5.9	7	-9	-37	..	..
13	7.9	16	5.8	16	-10	..	..	..
14	7.8	24	5.8	26	-12	..	..	..
15	7.8	27	5.7	29	-12	..	..	..
16	7.5	29	5.8	31	-17	..	..	..
17	7.4	30	5.7	31	-18	..	..	..
18	7.4	30	5.6	31	-19	..	..	..
19	7.3	30	5.6	31	-19	..	..	..
20	7.4	30	5.6	31	-19	..	..	..
21	7.4	30	5.7	31	-18	..	..	..
22	7.3	30	5.7	31	-20	..	..	..
23	7.0	24	5.4	23	-22	..	..	..
24	7.1	16	5.6	16	-16	..	..	..

VK SOUTH — AFRICA

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	7.6	21	5.8	22	-12	..	..	..
2	7.5	16	5.8	15	-11	..	..	..
3	10.0	14	7.4	9	3	-17	-36	..
4	14.0	13	10.8	-2	13	2	-10	-28
5	16.3	10	12.4	-21	11	4	-5	-20
6	16.0	9	12.9	-29	10	6	-3	-16
7	15.3	8	12.3	-28	9	3	-5	-19
8	14.1	8	11.2	-22	8	0	-10	-27
9	12.4	8	9.8	-14	6	-5	-19	..
10	10.5	8	8.3	-6	1	-15	-34	..
11	9.0	8	7.0	1	-4	-26	..	..
12	7.9	10	6.2	7	-11	..	..	..
13	7.4	14	5.7	14	-17	..	..	..
14	7.3	23	5.6	23	-22	..	..	..
15	7.2	26	5.5	27	-23	..	..	..
16	7.2	29	5.5	29	-24	..	..	..
17	7.2	29	5.5	30	-24	..	..	..
18	7.3	29	5.6	30	-24	..	..	..
19	7.2	29	5.6	30	-24	..	..	..
20	7.0	29	5.4	29	-26	..	..	..
21	7.2	29	5.7	30	-24	..	..	..
22	7.7	30	5.9	32	-18	..	..	..
23	7.3	30	5.7	31	-21	..	..	..
24	7.5	26	5.9	27	-17	..	..	..

VK WEST — AFRICA

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	6.9	27	5.3	25	-23	..	..	..
2	6.8	17	5.3	17	-21	..	..	..
3	9.4	14	7.1	9	0	-23	..	..
4	13.6	13	10.5	-4	12	0	-12	-32
5	15.7	10	12.0	-22	12	6	-3	-18
6	16.6	9	12.6	-32	11	7	-1	-14
7	17.0	8	12.7	-36	10	7	0	-12
8	16.3	8	12.2	-35	9	5	-2	-15
9	15.0	8	11.3	-29	7	3	-4	-22
10	13.2	9	9.9	-17	8	-2	-15	-34
11	11.2	10	8.4	-4	5	-11	-29	..
12	9.6	12	7.2	5	0	-23	..	..
13	8.4	17	6.3	17	-7	-36	..	..
14	8.0	25	6.0	28	-12	..	..	..
15	7.9	28	5.9	31	-13	..	..	..
16	7.9	30	5.8	33	-14	..	..	..
17	7.8	31	5.9	34	-14	..	..	..
18	7.9	31	5.9	35	-13	..	..	..
19	8.0	31	6.0	35	-13	..	..	..
20	7.8	31	5.9	34	-14	..	..	..
21	7.4	31	5.6	33	-20	..	..	..
22	7.5	31	5.8	33	-18	..	..	..
23	8.3	31	6.3	33	-8	..	..	..
24	7.7	31	5.9	34	-15	..	..	..

VK EAST — ASIA

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	19.2	12	14.8	-32	15	13	8	-2
2	19.8	12	14.9	-37	15	14	8	-1
3	19.7	11	15.0	-36	15	14	9	0
4	20.0	12	15.2	-36	16	15	10	0
5	20.1	12	15.3	-30	17	16	10	1
6	19.3	13	14.7	-21	18	15	9	-2
7	17.6	14	13.5	-7	20	13	4	-8
8	15.8	17	11.8	14	20	8	-4	-23
9	13.8	19	10.4	34	17	0	-19	..
10	11.8	23	9.0	38	10	-15	..	..
11	10.8	24	8.2	39	4	-26	..	..
12	10.3	25	7.9	41	0	-33	..	..
13	9.8	26	7.4	40	-5	..	..	..
14	9.4	27	7.2	39	-9	..	..	..
15	9.2	27	7.0	38	-12	..	..	..
16	9.3	27	7.1	39	-10	..	..	..
17	8.8	27	6.8	36	-19	..	..	..
18	7.7	28	5.5	29	..	..	..	..
19	7.1	28	5.5	29	..	..	..	..
20	7.8	28	6.1	33	-30	..	..	..
21	11.4	21	8.9	30	7	-17	..	..
22	16.8	16	13.1	2	21	12	2	13
23	18.7	14	14.4	-14	19	15	6	-4
24	19.0	12	14.6	-25	17	14	8	-3

VK SOUTH — ASIA

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	15.4	9	11.7	-32	10	4	-4	-19
2	16.0	9	12.1	-37	10	6	-2	-15
3	16.5	9	12.4	..	10	7	0	-13
4	16.6	9	12.5	-33	10	7	0	-12
5	16.6	10	12.5	-34	11	8	0	-12
6	16.1	11	12.1	-26	12	7	-1	-15
7	14.9	12	11.2	-13	13	4	-7	-24
8	13.2	15	9.9	6	12	-3	-19	..
9	11.2	20	8.5	27	8	-19	..	..
10	9.7	22	7.3	31	-6	..	..	..
11	8.4	24	6.4	30	-22	..	..	..
12	8.0	25	6.0	31	-30	..	..	..
13	7.9	26	5.9	31	-32	..	..	..
14	7.8	26	5.8	31	-34	..	..	..
15	7.7	26	5.7	30	-36	..	..	..
16	7.8	26	5.9	31	-34	..	..	..
17	7.9	26	6.0	31	-32	..	..	..
18	7.7	26	5.8	30	-37	..	..	..
19	7.7	26	5.1	23	..	..	..	..
20	6.5	26	5.1	22	..	..	..	..
21	8.4	26	6.6	34	-23	..	..	..
22	11.1	13	8.6	6	3	-19	..	..
23	13.3	10	10.2	10	9	-3	-17	-36
24	14.7	10	11.3	-23	10	3	-8	-24

VK WEST — ASIA

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	18.2	13	14.0	-21	17	13	6	-6
2	18.7	12	14.3	-29	16	13	7	-4
3	19.0	12	14.5	-34	16	13	7	-3
4	19.5	12	14.8	-35	15	14	9	0
5	19.6	12	14.9	-34	16	15	9	0
6	19.7	13	15.0	-29	17	15	10	0
7	19.6	14	14.9	-21	19	16	10	0
8	18.6	15	14.2	-9	21	16	8	-4
9	16.8	18	12.8	10	22	13	2	-13
10	14.7	20	11.1	31	21	6	-10	-33
11	12.7	21	9.7	35	14	-8	29	..
12	11.0	22	8.4	37	3	-26	..	..
13	10.1	24	7.7	38	-4	39	..	..
14	9.8	25	7.4	39	-8	..	..	..
15	9.3	25	7.1	38	-13	..	..	..
16	9.0	25	6.9	37	-17	..	..	..
17	8.9	25	6.8	36	-19	..	..	..
18	9.1	25	6.9	37	-16	..	..	..
19	8.5	25	6.5	35	-25	..	..	..
20	7.3	26	5.7	28	..	..	..	..
21	7.3	25	5.7	28	..	..	..	..
22	9.7	20	7.3	26	-8	..	..	..
23	13.6	15	10.1	15	13	2	19	..
24	18.7	14	12.9	-9	17	10	0	-14

VK EAST — EUROPE

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	10.0	-5	7.2	-36	1	-7	-19	-39
2	10.0	-10	7.2	...	0	-8	-17	-35
3	11.0	-9	8.0	...	0	-3	-11	-26
4	12.7	-6	8.9		-1	0	-6	-17
5	14.6	-2	10.6		-3	1	-2	-10
6	15.7	0	11.5	...	-3	2	0	-7
7	16.1	2	11.8	...	-2	3	1	-6
8	16.3	3	12.0	...	0	3	0	-8
9	14.3	3	10.8	...	3	2	-4	-16
10	12.4	2	9.4	...	4	-2	-12	28
11	10.7	3	8.1	-24	3	-8	-22	...
12	9.8	5	7.5	-12	1	-14	-31	...
13	9.5	6	7.2	-3	1	-18	-38	
14	9.1	12	6.9	6	1	24		
15	8.8	17	6.6	15	-3	-30		
16	8.7	21	6.6	22	-4	-34		
17	8.9	24	6.7	28	-3	-34		
18	8.3	27	6.4	31	-9			
19	7.2	29	5.5	30	-23			
20	7.2	29	5.6	30	-23			
21	9.0	30	6.8	37	0	31		
22	9.3	23	7.0	25	2	-23		
23	11.2	13	7.9	-2	8	-4	19	
24	10.5	3	7.4	-23	4	-7	-20	

VK SOUTH — EUROPE

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	10.3	6	7.2	-15	5	-8	-23	...
2	10.2	-3	7.2	-34	2	-7	-19	-39
3	11.3	-4	8.0	...	1	-3	12	27
4	13.2	-2	9.1	...	0	0	-5	-16
5	15.3	0	10.9	...	-2	2	0	-8
6	16.6	2	11.8	...	-3	3	1	-4
7	17.0	2	12.1	...	-3	3	1	-5
8	15.8	2	11.9	...	-1	2	0	-9
9	13.9	0	10.5	...	1	1	-5	-16
10	11.8	-1	8.9	...	2	-3	-13	-29
11	10.1	-2	7.6	-30	1	-9	-23	...
12	8.9	-1	6.6	-16	-1	-18	-36	...
13	8.4	3	6.3	-5	-4	-25	...	...
14	8.4	9	6.2	4	-5	-30	...	...
15	8.3	16	6.2	14	-6	-35	...	...
16	8.3	24	6.1	27	-8	...	...	...
17	8.4	27	6.3	31	-7	...	...	...
18	8.5	29	6.4	34	-7	...	...	...
19	8.3	29	6.3	34	-9			...
20	7.8	29	5.9	32	-15	...	...	...
21	7.9	29	6.1	33	-14	...	...	...
22	8.2	29	6.3	34	10	...	...	...
23	7.8	25	6.0	27	-13		...	
24	10.9	18	7.6	10	10	-6	-24	...

VK WEST — EUROPE

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	10.8	17	7.4	11	8	-10	-26	
2	10.5	6	7.3	-15	3	10	25	
3	11.6	1	8.1	-38	3	-4	15	-33
4	13.8	1	9.4	.	2	0	6	-16
5	16.1	3	11.3	...	0	3	0	6
6	17.5	4	12.3	...	-1	4	2	-4
7	17.9	4	12.6	...	-2	4	2	-3
8	18.1	4	12.7		-2	4	3	-3
9	17.7	4	12.9	...	0	4	1	6
10	15.9	3	12.1	...	2	3	-2	-12
11	13.7	3	10.4	...	3	0	9	-23
12	11.9	3	9.0	-29	3	-6	-18	-38
13	10.3	5	7.8	-13	1	14	-32	
14	9.6	9	7.2	0	-1	-21		
15	9.4	15	7.1	13	-1	-26		
16	9.1	20	6.8	22	3	32		
17	8.9	24	6.8	28	-5	-37		
18	8.9	26	6.7	32	-5	38		
19	9.0	27	6.8	35	-4	-37		
20	8.6	28	6.6	34	-8			
21	7.7	28	5.9	31	-20			
22	7.7	28	5.9	31	-20			
23	8.0	29	6.1	32	-15	...		
24	8.3	27	6.3	31	-11			

VK EAST — EUROPE (Long path)

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	12.4	16	8.4	1	13	3	-9	-27
2	11.5	17	7.8	8	12	-1	-15	-35
3	10.7	19	7.4	15	11	-6	-21	...
4	10.3	24	7.1	25	11	-8	-27	...
5	10.2	24	7.1	25	10	-9	-28	...
6	11.3	24	7.8	29	14	-4	-22	...
7	10.8	23	6.2	25	12	-6	-24	...
8	9.8	16	7.3	12	5	-13	-33	...
9	7.6	3	5.8	0	-4	-28	...	...
10	7.5	-5	5.8	-9	-3	-22	...	...
11	8.3	-7	6.1	-19	-1	-16	-32	...
12	8.2	-13	6.0	-26	-1	-13	-28	...
13	8.2	-18	6.1	-32	-1	-11	-25	...
14	8.2	-27	6.1	...	-6	-16	-28	...
15	8.3	-34	6.2	...	-9	-18	-31	...
16	8.1		6.1		-14	-23	-37	
17	7.6	...	5.8	...	-20	-31	...	...
18	7.7		5.9		-17	-28		
19	8.9	-18	6.5	...	-1	-8	-19	-37
20	11.4	-5	8.8	...	0	-3	-12	-26
21	13.8	3	10.4	...	3	1	-6	-18
22	16.3	9	10.5	-34	9	6	-1	-12
23	14.3	13	9.8	-17	13	7	-1	-14
24	13.3	14	9.0	-6	13	5	-5	-20

VK SOUTH — EUROPE (Long path)

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	11.8	13	8.2	-4	10	0	-13	-31
2	11.0	17	7.7	9	10	-4	-20	...
3	10.3	24	7.2	27	10	-10	-29	...
4	10.0	24	7.1	28	9	-12	-32	...
5	10.1	24	7.1	27	9	-12	-32	...
6	11.1	24	7.9	28	14	-4	-22	...
7	10.9	21	6.9	25	9	-10	-30	...
8	9.4	15	7.3	13	0	-22	...	...
9	8.2	6	6.4	3	-6	-29	...	...
10	7.6	-1	5.8	-4	-6	-28	...	...
11	7.6	-6	6.9	-11	-6	-24	...	...
12	7.6	-11	5.6	-17	-3	-20	-38	...
13	7.6	-22	6.0	-29	-6	-21	-39	...
14	7.6	-36	5.8	...	-14	-28	...	...
15	7.6	...	5.9	...	-20	-34	...	...
16	7.5		5.8		-28			...
17	7.2	...	5.6	...	-37	...	...	...
18	7.4		5.8		-35		...	...
19	8.4	...	6.4	...	-20	-29	...	...
20	10.2	-12	8.2	...	-1	-6	-13	-28
21	12.2	-5	9.6	...	0	-2	-9	-21
22	13.8	0	10.2	...	1	0	-6	-17
23	13.6	4	9.5	...	5	3	-4	-15
24	12.6	9	8.7	-21	9	2	-9	-23

VK WEST — EUROPE (Long path)

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	11.5	3	8.0	-26	4	-4	-15	-31
2	10.7	6	7.5	-11	4	-7	-21	
3	10.1	9	7.1	-2	3	-11	-27	
4	9.6	12	7.0	4	3	-13	-31	
5	9.9	13	7.1	7	4	-13	-31	
6	10.9	15	7.6	8	8	-7	-22	
7	12.2	16	8.8	9	12	0	-13	-33
8	12.6	13	9.9	6	10	-1	-15	-34
9	10.9	10	8.9	1	4	-11	-27	
10	9.3	3	7.2	-8	-2	-19	-37	
11	8.2	-5	6.3	-14	-5	-22		
12	7.7	-12	5.9	-19	-5	-21	-39	
13	7.6	-20	5.6	-26	-8	20	-36	
14	7.5	-38	5.7	...	-14	-28		
15	7.5	...	5.9	...	-22	-35		
16	7.6		5.7		-28			
17	7.6		5.6		-32			
18	7.5		5.8		-36			
19	7.1		5.8					
20	7.3		5.7		-34			
21	8.3	...	6.2		-18	-27		
22	10.2	-13	8.1	...	-3	-8	-17	-32
23	12.1	-4	9.3	...	-1	-5	-12	-26
24	12.2	-1	8.8	.	1	-2	-10	-24

VK EAST — MEDITERRANEAN

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	10.6	3	8.0	-24	4	-7	-21	...
2	11.2	-2	8.4		2	-4	-15	-32
3	14.3	1	10.6	...	1	1	-4	-14
4	18.0	5	13.6	...	0	5	3	-3
5	19.8	5	15.0	...	-2	5	4	-1
6	19.5	4	14.6	...	-2	4	3	-1
7	18.3	4	13.9	...	-1	4	2	-4
8	16.4	4	12.5	...	1	3	0	-9
9	14.2	3	10.7	...	3	1	-6	-19
10	12.3	2	9.3	-39	3	-3	-14	-31
11	10.7	3	8.1	-22	2	-9	-24	...
12	9.9	6	7.5	-9	1	-16	-33	...
13	9.7	12	7.3	4	1	-19	...	...
14	9.3	17	7.0	16	0	-24	...	...
15	9.1	24	6.9	28	-1	-30	...	...
16	9.1	27	6.8	32	-1	-31	...	...
17	9.2	28	7.0	36	0	-30	...	...
18	8.8	29	6.7	36	-4	-37	...	...
19	7.7	30	5.9	33	-14	...	...	...
20	7.7	30	6.0	33	-14	...	...	...
21	9.8	26	7.4	38	6	-23	...	...
22	8.5	27	6.5	31	-6	-38	...	...
23	8.2	16	6.3	15	-7	-36	...	...
24	11.7	12	8.9	-4	9	-4	-18	.

VK SOUTH — MEDITERRANEAN

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	10.5	11	8.0	-3	5	-10	-27	...
2	10.9	3	8.3	-25	4	-6	-20	
3	14.2	4	11.2	...	4	2	-6	-17
4	18.1	6	13.7	...	2	6	3	-3
5	18.4	5	13.8	...	0	6	3	-3
6	18.3	4	13.7	...	-1	4	2	-4
7	17.7	4	13.3	...	0	4	1	-6
8	16.3	3	12.2	...	1	3	-1	-10
9	14.3	2	10.7	...	2	1	-6	-16
10	12.1	1	9.1	...	2	-4	-15	-32
11	10.4	0	7.8	-26	1	-11	-27	...
12	9.1	3	6.8	-9	-2	-21	...	...
13	8.6	8	6.4	2	-5	-29	...	...
14	8.6	15	6.3	13	-6	-34	...	...
15	8.5	23	6.3	26	-7	...	...	...
16	8.4	26	6.2	30	-6	...	...	...
17	8.6	28	6.4	34	-7	...	...	...
18	8.6	29	6.6	36	-6	...	...	...
19	8.5	29	6.4	34	-8	...	...	...
20	8.0	29	6.1	33	-14	...	...	...
21	8.1	29	6.2	33	-13	...	...	...
22	7.9	29	6.1	33	-16	...	...	...
23	7.7	27	5.9	30	-17	...	...	...
24	11.1	20	8.4	20	9	-11	-31	...

VK WEST — MEDITERRANEAN

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	9.7	16	7.4	17	2	-22		
2	10.2	6	7.7	-7	2	-15	-33	
3	13.1	6	10.3	-34	5	-1	-11	-26
4	16.6	6	12.6	...	6	5	0	-10
5	17.4	5	13.5	...	3	5	0	-8
6	17.5	4	13.2	...	2	4	0	-8
7	17.5	4	13.2	...	1	4	0	-8
8	17.1	4	13.0	...	1	4	0	-9
9	16.0	4	12.1	...	2	2	-3	-14
10	14.2	4	10.8	.	4	0	-8	-23
11	12.2	4	9.2	-29	3	-6	-19	-38
12	10.6	5	8.0	-13	1	-15	-33	
13	9.2	8	7.0	0	-4	-27		
14	8.7	14	6.5	12	-8	-37		
15	8.8	22	6.4	26	-10			
16	8.4	25	6.3	30	-12			
17	8.3	27	6.3	32	-14			
18	8.3	28	6.2	34	-14			
19	8.4	28	6.4	34	-13			
20	8.1	28	6.2	33	-16			
21	7.3	29	5.6	30	-27			
22	7.3	29	5.7	30	-27			
23	7.8	29	6.0	32	-19			
24	7.5	29	5.6	31	-23			

VK EAST — USA/CARIBBEAN

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	19.5	7	16.0	...	3	8	5	-1
2	19.8	9	15.0	...	9	11	7	0
3	18.9	14	16.1	-30	16	15	10	1
4	17.0	17	13.5	-1	21	15	7	-6
5	15.7	22	12.5	23	25	15	4	-11
6	14.7	24	11.6	34	26	13	0	-18
7	13.9	26	11.1	39	25	9	-5	-25
8	12.6	25	9.6	41	19	-1	-19	...
9	10.9	27	8.2	40	11	-14	-37	.
10	10.1	28	7.6	39	5	-22	...	...
11	9.7	26	7.3	38	3	-26	...	...
12	9.3	29	7.0	37	0	-31	...	...
13	9.0	28	6.7	34	-3	-35	...	
14	8.0	19	6.2	19	-9	...	...	...
15	8.3	12	6.4	8	-6	-32	...	...
16	8.5	4	6.5	-4	-5	-27	...	
17	7.4	-8	5.6	-11	-9	-32	...	...
18	7.3	-15	5.7	-18	-7	-27	...	
19	9.6	-8	7.5	36	-1	12	-27	...
20	13.5	0	10.4	...	0	-1	-9	-22
21	16.6	2	12.8	...	0	2	-1	-10
22	18.3	3	14.0	...	1	3	1	-5
23	18.9	4	14.4		-1	4	2	-3
24	19.4	5	14.7	...	0	5	4	-2

VK SOUTH — USA/CARIBBEAN

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	16.8	8	14.5	...	5	6	5	-2
2	18.9	11	14.1	...	11	11	7	-1
3	18.8	14	14.1	-19	18	15	9	0
4	17.6	19	13.6	6	24	18	10	-2
5	16.2	22	12.5	29	27	17	6	-9
6	14.7	23	11.0	35	25	10	-3	-22
7	12.4	25	9.3	38	18	-1	-19	...
8	10.6	28	7.8	39	10	-15	-39	...
9	9.3	29	6.9	37	1	-30	...	...
10	8.8	29	6.5	36	-3	-36	...	...
11	8.8	29	6.5	36	-3	-35		.
12	8.7	29	6.4	36	-4	-38	...	...
13	8.7	28	6.5	34	-4	-38	...	...
14	8.5	21	6.5	21	-4	-34	...	...
15	8.2	12	6.4	9	-6	-32	...	...
16	8.7	5	6.5	-4	-3	-25	...	...
17	8.1	-4	6.2	-13	-5	-25	...	...
18	8.2	-9	6.3	-21	-4	-21	...	
19	9.5	7	7.0	34	-1	-12	-27	...
20	12.2	-2	9.4		1	-3	-12	-27
21	14.7	1	11.2	...	0	1	-4	15
22	16.4	3	12.5	...	0	3	0	-9
23	17.4	4	13.2	...	0	4	1	-6
24	18.2	5	13.7	...	1	5	3	-4

VK WEST — USA/CARIBBEAN

UTC	MUF	dBU	FOT	7.1	14.2	18.1	21.2	24.9
1	17.1	4	13.0	...	0	5	3	-4
2	17.9	7	13.5	...	3	7	5	-2
3	18.4	11	14.3	...	9	11	7	0
4	16.9	14	13.5	-36	14	13	7	-2
5	15.6	17	12.4	-11	18	13	5	-7
6	14.8	22	11.6	12	22	13	2	-13
7	13.8	25	11.1	28	24	11	-1	-20
8	12.9	28	10.1	38	24	8	-7	-28
9	12.1	28	9.2	39	20	1	-17	
10	10.5	30	7.9	41	12	-12	-36	
11	9.2	31	6.9	38	3	-26		
12	8.7	31	6.5	37	0	-32		
13	8.7	31	6.5	36	0	-32		
14	8.7	23	6.4	24	0	-29		
15	8.3	16	6.4	13	-2	-28		
16	8.0	5	6.2	0	-3	-25		
17	8.9	2	6.7	-11	1	-16	-35	
18	8.7	-4	6.6	-20	0	-14	-31	
19	8.1	-12	6.2	-25	0	-14	-31	
20	8.1	-16	6.3	-31	0	-11	26	
21	9.5	-12	7.0	...	1	-6	-17	-36
22	12.3	-4	9.5	.	0	0	-7	-20
23	14.7	0	11.3		-1	2	-2	-11
24	16.3	2	12.4	.	-1	3	1	-6

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● Transmitter valves 4X150D, original packed in tin can, $24 each. Military receiver AN/PRC9, 47-55 MHz (6 metre amateur band), one channel xtal controlled. 10 V DC, $20 each. D Dauner Electronics, 51 Georges Crescent, Georges Hall NSW 2198, tel (02) 724 6982, fax (02) 725 7850.

FOR SALE NSW

● SYNTHESISER for Philips FM828 transceiver, with documentation, $100. John VK2WW (02) 546 1927.

● FOR SALE by Tender, Deceased Estate. KENWOOD TS430S HF Transceiver s/n 3110485. KENWOOD AT130 Antenna tuner s/n 3080302, KENWOOD TH25AT VHF transceiver s/n 0080510, KENWOOD TR7730 2 m FM Transceiver s/n 2010850, YAESU FRG965 VHF/UHF Comm receiver s/n 5M09082; KENWOOD PS430 power supply, KENWOOD MC50 Microphone; KENWOOD Ham clock, KENWOOD HS5 Headphones; GENERAL TF181 8 band receiver; REALISTIC PRO32 scanner s/n 515731; SONY FET airband direction finder with AC adaptor (TFM-8600W); HOME BREW tower crank up with TH6DXX and rotator; BUTTERNUT HFV-II vertical antenna. Offers in writing to Deceased Estate Officer, PO Box 1066, Parramatta NSW 2124. Enquiries as to condition, etc: Michael VK2YC (02) 626 9288.

● DECEASED ESTATE VK2AGN. FT227R 2 m mobile $150; FT101B $300; SP102 $25, FT400 $200, MICRONTA swr meter $25, MICRONTA 12 V/7 A power supply $125, PRO 2011 scanner $100; HOMEBREW 12 V/5 A power supply $75; YAESU YD844 desk mic $25; TRIO 9R59DS Comm receiver $50. All prices plus freight. N Chivers VK2YO QTHR (047) 51 2464.

● ICOM IC320A 2 m/70 cm mobile transceiver, 30 W/25 W, 22 mem, LCD, s/n 1586, vgc, used as base, with bracket, $650. Greg VK2CAT QTHR (066) 53 4601.

● STANDARD ncad battery pack CNB161, 700 mAh, for Standard handheld transceiver, good condition, $60; SCANNER PRO 2022 210 channel desktop/mobile, mains plus 12 V, in original packing, as new, cost $550, sell $320. Brad VK2KQH day (02) 906 5855; otherwise (018) 64 0377.

● YAESU FT7 transceiver with instruction manual, very good order and good performer, $350. Ric VK2PH (02) 817 0337.

● SATRACKER satellite antennas 2 m 70 cm, KENWOOD dual rotators, pre-amp, lower cables, Kansas City program, $1250; YAESU FT1, $1000; YAESU ATU, FC902, $250. Boy VK2DTH North Star 2408 (076) 76 3153.

● KENWOOD BC-6 fast charger for HT transceiver, $75, TS930S in excellent condition, narrow filters fitted, some spares included, offers invited, IBM XT computer and colour monitor with lots of extras, any offers? Horst (02) 971 9795.

● MOBILE SHACK 1976 Ford m/home Falcon, hand throttle, wired for AR, 5 ant mounts, triple swr, some ants supplied, coaxed and 12 V, suit full call, mech minded retiree. See AR May 1978 p19, $9,500 ono. Arthur VK2IK QTHR (02) 876 1465.

● KENWOOD station monitor model SM-220 with pan 8 adaptor fitted and operating manual, vgc, $350 firm. Tony VK2CAM QTHR (02) 638 3569.

● MARCONI signal generators model TF2011 130-180 MHz, TF2012 400-560 MHz, TF887 10-470 MHz, $275 each; HP Audio generator to 625 kHz, $175. Peter VK2CPK QTHR (02) 605 4790 or (02) 689 2417.

● Free to anyone who can use them. Six rolls TTY paper 7 ply with carbon. Siemens M100 teleprinter in working order. Also reperforator, working. Peter VK2BEU QTHR (02) 872 3381.

● DECEASED ESTATES. Sale by tender only. KENWOOD ITEMS.- TS450SAT transceiver, s/n 30300612; DSP100 digital speech processor, s/n 20900011, PS53 power supply, s/n 30800324, PS50 power supply, s/n 7060307; TS50 antenna tuner, s/n 41101920, PS30 power supply, s/n 0060760, VFO120 external VFO, s/n 930551; SP120 external speaker, s/n 920267; R5000 receiver, s/n 9120255; AT200 antenna tuner, s/n 950637, SP520 extension speaker, s/n 521464, TS900 transceiver, s/n 8401012, PS900 power supply, s/n 840190; MA4000 transceiver, s/n 6050749; DB81 dip meter, s/n 2040175. ICOM IC R7000 receiver, s/n 504002621; BWD Model 506 oscilloscope; EINS Model PHP/11 RF power meter, s/n 801501032; Oskerblock SWR200 power/SWR meter, s/n 59081, Alinco ALX2T handheld, never used, s/n 30173548, YAESU ITEMS - FT730R 70 cm transceiver, s/n 3F070985, FT230 2 m transceiver, s/n 4C220129; FT290R 2 m transceiver, s/n 3D220498; FRG8800 receiver, s/n 5F070526; FRA7700 preamp, s/n 2G040804, FRV7700 VHF converter, s/n 2J050267, FP707 power supply, s/n 1N160303. Please forward tenders to WIA NSW Division Deceased Estate Officer, PO Box 1066, Parramatta 2124. Enquiries after 6.00 pm to Michael VK2YC (02) 626 9288.

FOR SALE VIC

● HAM HEAVEN. Modern BV house, three bedrooms, kitchen, lounge, dining room, laundry and bathroom — 50 km from Melbourne. Air conditioner, gas fire, elec HWS. Carpets throughout. Power and telelphone underground. Local state school, buses to secondary schools and fast electric trains to Melbourne from nearby Cranbourne. Mail delivered. Nine separate paddocks with water points from bore. Portable spray irrigation if needed. No floods, fires or droughts here. Melbourne water supply, sewerage. Extensive lawns and gardens. Tree lined drive. Good growing soil. Area suitable for market gardening, flower growing or horse agistment. Self contained radio operations from bungalow consisting of shack, bedroom and an office with telephones. 11 acres of rhombics in elevated position covering clover leaf pattern. Suit DXer or contest operator. Price negotiable. VK3MR Snow Campbell, 059 985 363.

● ICOM 271A with pre/amp, $950, ICOM 735 100 W, $950; ICOM PS30, $300, MFJ 949D tuner, $300, MFJ 1701 6 ant switch $60; WERNER WOLF 10/15 m duoband, $150, ELECTROPHONE CB, $200. Ken VK3WAL (051) 52 3984.

● DECEASED ESTATE, VK3DPO. ICOM 271A s/n 02134 25 watt 2 m base station FM SSB, $995, ICOM 02A, s/n 03989, LCD, 2 m h/h, $195, YAESU FT-703R, s/n 5D040090, 70 cm, h/h, thumbwheel, $215, KENWOOD TS-430S

transceiver, s/n 4080838, (inc WARC), 100 watts, $1,200, YAESU FP707, s/n 2D180330, power supply to suit TS430, $400, YAESU linear amp FL2100Z, suit 430S, (inc spare O/P valve), $900, DAIWA ant tuner modified, s/n 160072, $275, KENPRO KR400 rotator with antenna CA-33, complete with instructions, wind up tower extendable to about 35ft, $700 as is on site complete, KENWOOD MA-5 antenna 5 band helical mobile, $125. All offers and enquiries to Kathy VK3XBA (03) 9872 3411 phone or fax

● YAESU FT620 6 m all mode, original condition, $400, YAESU FT290R MKII plus Tokyo HL-85v Gaasfet amp, $700; SSB ELECTRONICS 2.4 GHz power amp, 4 watts, $175. Roger VK3XRS, Box 98, Bairnsdale Vic 3875 (051) 52 2115.

● YAESU FT102 transceiver, little used, FC102 antenna tuner with remote antenna selector, owner upgrading equipment, best offer Peter (03) 9822 3783.

● DRAKE TR7 transceiver, excellent condition, complete with MC50 desk mic and workshop manual, RX covers 10 kHz to 30 MHz, $700 ono. Harold VK3AFQ QTHR (03) 9596 2414.

● DENTRON linear amplifier MLA2500, s/n 001498, plus tuner MT3000A, s/n 2723, $1,200 the pair; FRONTIER Electric SSB xcvr with ancillaries, not operative, $100. Laurie VK3DPD QTHR (03) 9818 6009.

FOR SALE QLD

● TENDER FELL ESTATE KISMET 60 ft tower, WWII radio cables, official radio service manuals, trade journals, Morse keys, telephone parts 1890-1940, transformers, coax cable, car mobiles, PSUs, books, var capacitors 300 pF 3 kV Peter VK4APD QTHR (07) 397 3751.

● KENWOOD TS440S/AT, narrow filters for SSB and CW fitted, PS50 power supply with amp and volt metres in front panel, MC60 desk mic, leads and manual, all vgc, $1950 the lot. Ted VK4OW QTHR (071) 28 3489.

● ANTENNA HyGain TH7DXCC 10/15/20 m, tower Kismet 60 ft telescopic 3-stage 13.5 in triangular base, AR7 coil boxes, reg PSU 12 V/10 A, valve B/C receiver chassis (working), large rotary inductor, transmitting capacitors. Peter, 17 Paxton St, Holland Park Qld 4121 (07) 397 3751.

● SWAN 350 txcvr 80-10 m, vox, plus handbook, $300. "Doc" VK4CMY (076) 85 2167.

● PRINTER Star NX-1000C, s/n 315280100151, multi-font dot matrix modified for Commodore 64 packet, manual, new ribbon, plus spares, connecting cord with 5 pin plugs, ready to go, $150. Sally VK4SHE QTHR (077) 78 8642.

● 8 ELEMENT ATN log periodic antenna, $500; 2 SECTION triangular Hills 40 ft tower with winch & guys, $250; HEAVY DUTY Diawa rotator CR4, $600 or the lot for $1,100; 70 cm 80 Element slot array ATV antenna, $50. Jeff VK4CEM QTHR (079) 78 5458.

● VALVES for amateurs, restorers. Valves for QRP rigs. Octals, novals, 5 stars, sockets. 6146, 807, 6V6. All tested. Reduced prices. Send 9" x 4" SASE for list. Ted VK4YG PO Box 245, Ravenshoe QLD 4872 (070) 976 387.

● SWAN 700CX/SS-16B special transceiver, power input 700 watts PEP, 400 watts DC input CW, spare 8950 PA tubes included and 240 volt AC power supply and manuals, GC, $750. RADIALL attenuators 50 W 3 dB 0-1 GHz, EC, $100. 15 W 3 dB 0-8 GHz, EC, $30. Eric VK4NEF QTHR (07) 395 5327.

FOR SALE SA

● FT107M HF xcvr WARC, scanning mic, inbuilt pwr supply, manual, $750 ono. Dale VK5AFO QTHR (08) 391 2300.

● COLLINS HF380 transceiver, vgc, $1800 ono or swap for valve Collins trcvr or S line plus cash difference. Josef VK5QQ QTHR (085) 263 6377.

● ICOM IC730 solid state 100w HF transceiver, s/n 12623, including service manual, $600. Keith VK5APN (08) 371 0044.

● SATELLITE antenna, Andrew 7.5 m Rx only professional solid with C band feed. Call Mat (086) 25 3396 AH or (086) 25 2505 BH.

● YAESU FT-411 2 m handheld, s/n 9O080112, as new in original carton, with charger FNB-14, PA6 adaptor, ant and soft case, $350 ono. John VK5KBE QTHR (08) 250 7259.

● DRAKE RECEIVER R4B, s/n 148188, Drake transmitter T4XB, s/n 18627B, Drake power supply AC4, s/n 399781, $800 — will not split. Yaesu FT7B HF transceiver, s/n 9N1000096, $400. Five mobile whips for 80, 40, 20, 15 and 10 metres, Yaesu type RSM-2, complete with gutter mount, used once, $150. Kenwood TS700SP two metre transceiver, $500. Chart recorder Rustrak 88, s/n 41609, $100. Decibel meter model 637-7 in superb polished wooden box, $100. Lunar 432 MHz pre-amp PAG-432, s/n 123216, $300, never used. Two large air blowers, suitable for linears, $60 each. Two CS201 coaxial switches, new, $80 each. Two 144 MHz coaxial sleeve antenna baluns, $80 each; 144 MHz coaxial sleeve combiner, $100 — all three for use with stacked antennas. GME Electrophone 40 channel UHF CB handheld FM transceiver Model TX475S, s/n 03Z310392, good battery, AC battery charger, unused carry-case and belt fitting, original condition, never been out of house, $350. All equipment in good condition. Transmitting valves — 4CX250B, two new $100 each, 4CX250R, one new $150; 4CX250B, 4 used $10 each; 2C39A, 12 used $10 each. New 4CX250B sockets, 3 at $80 each. QQE06/40, four new $60 each; QQE03/20, one new $50; QQE03/20 two used, $10 & $15 (latter, gold plated pins); CV2798 (QQE03/10) two new $30 each; QQV03/10 (look unused) four $10 each; QQE02/5 two new $20 each, QQE02/5 (look unused) four $10 each, QQE03/12 used $5; 2E26 new $15, 12BY7 used $5; 6CH6 used $5, 6AK5 four used $2 each, (Condition of used valves unknown, they look OK, but you take your chances at the low prices!) There are several QQE06/40 sockets, if I can find them. Ask if interested. Model VS-3 panel meter 0-1 mA, 82 x 60 mm, 45 mm round hole mount, new $20. Enc VK5LP, QTHR, (085) 751 531 after 0100 UTC.

FOR SALE TAS

● ROTATOR Kenpro KR400RC 240 volt control unit cables and rotator, $300 ono; YAESU 411E 2 m FM hand held, 5 W, speaker mike, 12 V pack and charger, leather case, manual, $420 ono; TOWER Telescopic base, 360 mm triangular top 180 mm square bottom, 25' high, top 24' high, over all height 49', cable operated, $300 ono. Martin VK7ZBG QTHR (002) 65 3106.

● ICOM 760PRO HF transceiver 150 W o/p, same as IC765, 100 kHz to 30 MHz inc SM8 desk mic, voice synth, tone enc, new cond, new price $6000, sell $3,500. Allen VK7AN (003) 27 1171.

WANTED NSW

● CIRCUIT diagram for oscilloscope BWD 506; also Ham related programs for Commodore 64. Will pay all expenses. V Dostoupil VK2EVD, 17 Orlando Cr, Voyager Pt NSW 2171, (02) 772 2411.

● PHILIPS FM828 UHF models T and U band. Ken VK2SX (02) 413 1846.

● AWA AMR100 sig strength meter and signal corps ID tag. Brian VK2GCE QTHR (02) 545 2650 AH or (02) 221 7700 BH.

● KENWOOD STATION MONITOR SM220 in good condition. Maurie VK2OW QTHR (02) 838 1834.

WANTED VIC

● CIRCUIT and information to modify AWA model 25 m Mark 2 SEC version to six metre band, will pay costs. Lindsay VK3WOM (056) 72 2563.

● AC POWER SUPPLY SW117, includes speaker, for Swan 240 transceiver. Or a suitable supply in working condition. Also single coil Z match antenna tuner. Dick VK3LDC QTHR (053) 301 927.

WANTED QLD

● REQUIRE GWO General coverage 150 kHz-30 MHz receiver solid state DX160, FRG7 or similar for serious monitoring. Reply with price to Gordon VK4KAL QTHR or PH/Fax (079) 85 4168 Fax on auto — 24 hr/day.

● CIRCUIT and relevant data alignment for receiver AMR101 costs covered. John VK4PM QTHR (074) 94 2917.

● ANY UNWANTED Heathkit equipment given a good home by collector, also AR88 receiver required. Please contact "Doc" Wescombe-Down VK4CMY (076) 85 2167 AH Granite Belt Amateur Wireless Group.

● ROTOR unit for "Telechron" 240 volt 50 Hz 2 pole electric clock 12 hour model 3F61 Pat Des 97453. Allan Bull VK4FBB QTHR (074) 92 1948.

● AR88 HF RX, Drake L4B, Yaesu FLDX2000, Heath SB200 or cheap homebrew linears for collection "Doc" VK4CMY (076) 85 2167.

● COPY OF proceedings of the 23rd Conference of the Central States VHF Society 1989. All copying and postage costs plus $10 for your trouble. Stuart VK4YFI, PO Box 143, South Gladstone Qld 4680, (079) 79 2276.

MISCELLANEOUS

● THE WIA QSL Collection (now Federal) requires QSLs. All types welcome especially rare DX pictorial cards special issue. Please contact Hon. Curator Ken Matchett VK3TL, 4 Sunrise Hill Road, Montrose Vic 3765, Tel (03) 728 5350.

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WIA Submission on Spectrum Licensing

The WIA has responded to the Spectrum Management Agency's Discussion Papers on "Implementing Spectrum Licensing", released in the first week of April, delivering a 13 page detailed submission to the SMA in the last week of May.

The body of the submission was largely drafted by Grant Willis VK5ZWI, John Martin VK3KWA and Roger Harrison VK2ZRH, with advice and assistance from David Wardlaw VK3ADW and Michael Owen VK3KI. The final submission was amalgamated and compiled by John Martin VK3KWA, the Chairman of the Federal Technical Advisory Committee. Each Division was consulted through its Federal Councillor during the drafting stage, before the final submission was compiled.

The 100 page "Implementing Spectrum Licensing" booklet set out, in the first Discussion Paper, the SMA's plans for introducing spectrum licensing and the types of measures they anticipated would be applied for it to operate; and in the second Discussion Paper, covered consideration of 132 bands between 39 MHz and 3100 MHz and bands the SMA would propose to the Minister for Communications as suited to spectrum licensing. (See "UHF Amateur Bands Earmarked for Spectrum Licensing", *Amateur Radio*, May 1995, pp 7-8).

The WIA argues for continued access to the presently allocated amateur bands between 39 MHz and 3100 MHz. "The WIA would seek the exclusion of current amateur spectrum from designation for spectrum licensing ... failing this, the WIA would argue for the continuation of current band sharing arrangements." In addition, "... the WIA would wish to argue strongly that no band should be offered in its entirety for spectrum licensing, and that a portion of each band should be excluded from consideration for spectrum licensing so that secondary services can retain access to the band under the apparatus licensing system."

The submission pointed out that the Amateur Radio Service shares its allocated bands between 148 MHz and 24 GHz as a secondary service, highlighting the importance of the fact that Australian amateur bands coincide closely with international amateur allocations and that there is increasing experimentation on the amateur bands above 420 MHz, particularly with wideband transmissions, such as FM television and high speed data, which require provision for sufficient bandwidth.

The submission put it that the WIA is opposed to spectrum licensing in bands where the Amateur Service currently shares spectrum space with other services. "In the event that the SMA plans to designate a band for spectrum licensing where the Amateur Service is currently a secondary user, the WIA seeks retention of shared access as a secondary user ..... particularly ... band segments allocated to the Amateur Satellite Service."

The Institute's argument is that this would promote spectrum efficiency, particularly where spectrum space is readily shared geographically or technologically in such a way that harmful interference is minimised or avoided, which is what applies now. "In many cases it is not essential for spectrum licensees to have exclusive use of their bands, and alternative sharing arrangements should be considered," the Institute argues.

As sections of the 23 cm and 13 cm bands were earmarked as suited to spectrum licensing in the Discussion Paper, the Institute's submission put strong arguments that these bands were unsuitable for spectrum licensing.

The 1260-1270 MHz segment of the 1260-1300 MHz band earmarked for spectrum licensing is used for amateur satellite uplinks and, as such, is a world-wide allocation. Amateurs also share the band with CAA and defence radars (although the former are being phased out). Use of the band is increasing and amateurs have established propagation beacons, voice repeaters and digital data links. The band is also used for conducting experimentation in EME, tropospheric and aircraft scatter propagation, and FM television. The Institute argues that spectrum licensing would cause considerable disruption to the Amateur Service.

With the 2300-2400 MHz band, the Institute argues that there is no reason why the primary user would require sole and exclusive use of the band as antennas are highly directive and a high degree of band sharing is possible. The submission pointed out that existing amateur use successfully shares the band with multi-point distribution services (MDS) with no harmful interference to MDS, many areas will not have an MDS service for some years and others, not at all. Amateurs' frequently agility enables avoidance of MDS frequencies, but withdrawal of the 2300-2400 MHz band would unnecessarily crowd amateur operations at 23 cm and severely limit the variety of technologies which amateurs could explore and exploit.

The WIA submission also commented on the SMA's proposal that the 148-149.9 MHz band was suited to spectrum licensing, arguing that this could result in increased interference to the Amateur Service (on 144-148 MHz) from pager services and the possibility of interference to Low Earth Orbiting Satellites (LEOS) operating within the same band.

Two annexes were attached to the submission. One covered, in general terms, the purpose of the Amateur Radio and Amateur Satellite services; the other detailed the 23 cm and 13 cm band plans.

Members wanting copies of the submission should request it from their Division.

The SMA received more than 60 submissions, one third of which were from amateurs and amateur radio groups, including the WIA.

WIA Morse Practice Transmissions

VK2BWI Nightly at 2000 local on 3550 kHz

VK2RCW Continuous on 3699 kHz and 144.950 MHz 5 wpm, 8 wpm, 12 wpm

VK3COD Nightly (weekdays) at 1030 UTC on 28.340 MHz and 147.425 MHz

VK3RCW Continuous on 144.975 MHz 5 wpm, 10 wpm

VK4WIT Monday at 0930 UTC on 3535 kHz

VK4WSS Tuesday at 0930 UTC on 3535 kHz

VK4WCH Wednesday at 1000 UTC on 3535 kHz

VK4AV Thursday at 0930 UTC on 3535 kHz

VK4WIS Sunday at 0930 UTC on 3535 kHz

VK5AWI Nightly at 2030 local on 3550 kHz

VK5RCW Continuous on 144.975 MHz, 5 wpm to 12 wpm

VK6WIA Nightly at 1930 local on 146.700 MHz and nightly (except Saturday) at 1200 UTC on 3.555 MHz.

Have you advised the WIA Federal Office of your new callsign? Use the form on the reverse side of the *Amateur Radio* address flysheet.

Hamads

Please Note: If you are advertising items For Sale and Wanted please use a separate form for each. Include all details; eg Name, Address, Telephone Number (and STD code), on both forms. Please print copy for your Hamad as clearly as possible.
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*Deceased Estates: The full Hamad will appear in AR, even if the ad is not fully radio equipment.
*Copy typed or in block letters to PO Box 2175, Caulfield Junction, Vic 3161, by the deadline as indicated on page 1 of each issue.
*QTHR means address is correct as set out in the WIA current Call Book.

*WIA policy recommends that Hamads include the serial number of all equipment offered for sale.
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CONTRIBUTIONS TO *AMATEUR RADIO*

Amateur Radio is a forum for WIA members' amateur radio technical experiments, experiences, opinions and news. Manuscripts with drawings and/or photos are always welcome and will be considered for possible publication. Articles on computer disk are especially welcome. The WIA cannot assume responsibility for loss or damage to any material. "How to Write for Amateur Radio" was published in the August 1992 issue of AR. A photocopy is available on receipt of a stamped, self addressed envelope.

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VK7	GPO Box 371D Hobart Tas 7001
VK8	C/o H G Andersson VK8HA Box 619 Humpty Doo NT 0836
VK9/VK0	C/o Neil Penfold VK6NE 2 Moss Court Kingsley WA 6026

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